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ABSTRACT

This series of one- to two-page abstracts highlights a variety of innovative approaches to teaching and learning in the community college. Topics covered in the abstracts include: (1) staff development; (2) integrating computers into the curriculum; (3) a strategy for selecting and hiring good teachers; (4) faculty involvement in support services for disabled students; (5) a 3-week course in health and self-awareness taught in Yosemite National Park; (6) using a team approach to improve communication among students in different health fields; (7) cooperation with high schools; (8) cultural immersion and developmental education; (9) improving students' chances for academic success; (10) a class assignment that has composition students visit various departments and offices on campus, while improving their vocabulary and writing skills; (11) eliminating the letter grading system; (12) learning to learn strategies; (13) cost/benefit testing; (14) teaching English composition; (15) "research" in freshman chemistry; (16) historical illiteracy in the community college; (17) assessment and advisement; (18) behaviors associated with academic success; (19) student-teacher relations; (20) keeping abreast of academic trends; (21) the reinstatement of taking roll; (22) the role of the department chair; (23) role playing in history instruction; (24) the high school-to-college transition; (25) instructor-created barriers to student learning; (26) moving from theory to practice in science instruction; (27) physics students' retention; (28) the instructor as division chair; (29) using the law library as a resource; (30) establishing academic objectives by consensus; (31) competency-based learning; (32) improving students' ability to take multiple-choice exams; (33) using student information cards; and (34) teaching thinking skills. (AJL)

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INNOVATION ABSTRACTS

VOLUME X, NUMBERS 1-30

Suanne D. Roueche, Editor

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INNOVATION ABSTRACTS VOL. X NO. 1

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PUTTING THE "STAFF" BACK INTO STAFF DEVELOPMENT

Quite often administrators and instructors do not agree upon or similarly prioritize the goals of staff development programs. Sometimes efforts to invigorate the faculty and staff are lost; they haven't "bought into" the process with their own ideas. The result is a faculty that feels alienated from the administration and an administration that feels frustrated because instructors aren't excited about taking part in many aspects of *their* excellent staff development program! What is needed is a program backed by the administration but developed and implemented by the faculty and staff.

Wayne Community College has designed and is implementing such a Staff Development Program. Funds from a Title III grant supported the development of the program that was to emphasize the staff's professional and personal growth. Staff members were to be given the opportunity to assess their own development needs and determine individual goals. The institution was to provide conditions conducive to the accomplishment of these goals and, where possible, the funds to accomplish them.

The Program

Today, the Staff Development Program at WCC emphasizes the importance of improving academic advising skills and job-related skills, recognizing and addressing the needs of the disadvantaged student. The primary emphasis, however, is on the individual staff member's needs.

All faculty and staff members are given a copy of the Staff Development Handbook. Further, they are kept apprised of current staff development activities through a quarterly Staff Development Newsletter and designated bulletin boards located throughout the campus.

Each school year, staff members set personal and professional goals and objectives to pursue during the year. A written progress report is made each spring to the Vice President for Instructional Services.

Staff Development Committee

A Staff Development Committee, appointed by the President, is composed of administrators, faculty, and support staff members from across the college who meet monthly to plan, discuss and vote on matters pertaining to staff development. This committee also makes recommendations for programs to implement tuition assistance, developmental leave, travel, and other activities. The committee is chaired by an elected chairperson.

Back-To-Industry

The committee also has developed several innovative programs in the last two years. A concept which is not unique to our campus, titled Back-To-Industry, was developed with the help of various grants. The program allows instructors to leave campus for as long as one quarter to train in a vocational or technical setting; the instructor's classes are taught by a replacement part-time instructor. The instructor continues to be paid by the college, but his/her replacement is paid with grant funds. Upon returning, the instructor is obligated to make a written report on his/her training and explain how this training will affect the current curriculum or courses. The report and additional outcomes of the training experience are to be shared within their departments. The program has been extremely successful, placing eight instructors in industry for training during the first year of operation.

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Project Horizons

The success of this program led to the development of another, Project Horizons. It has been a popular program with the staff and the community. This program complements Back-To-Industry as staff members are often at a loss as to where they should train, and this project seeks to familiarize them with local industry. Project Horizons schedules staff for brief industry visitations (two hours at the most), to see first-hand what local businesses and industries are doing. Many staff members, even those who have lived in the area for several years, know little about local companies and their products. With Project Horizons, instructors get ideas for places to train for Back-To-Industry, can prospect for co-op placements, and/or can find future guest speakers for their classes.

The Project Horizons program is unique in that the entire tour is planned, coordinated and promoted by a member of the Staff Development Committee. Each month's tour is planned by a different committee member. This rotation among members allows all committee members to be more active, developing professionally and personally.

Tuition Assistance, Educational and Developmental Leave

The cornerstone of the Staff Development Program is the Tuition Assistance, Educational and Developmental Leave policies. In addition to one free WCC course per quarter, staff members can apply for up to $100 in tuition assistance twice a year for courses related to their assigned college duties. If personal educational needs require more time to complete, staff members can apply for up to 60 days of paid Educational Leave; or if the type of study is non-traditional in nature, they may be granted Developmental Leave (as is the case with Back-To-Industry). Of course, a formal application is necessary, and approval is made based on the present needs of the college.

Outside Activities

The Department of Staff Development within the North Carolina Department of Community Colleges offers special services and distributes staff development funds to the colleges. Professional development seminars and teleconferences are but a few of these services and are often hosted on individual college campuses. In an effort to improve activity selection for the staff, state level Staff Development activities have been incorporated into planning for WCC's program.

Participation in professional activities is voluntary and is strongly encouraged. Staff members must obtain permission from their supervisors to attend an activity and then coordinate final arrangements through the Staff Development Office. If travel funds are available through the Staff Development Committee, it must recommend approval; and this committee has developed a strong reputation for thorough decision-making and careful evaluation of all proposed activities.

Conclusion

Our successful Staff Development Program emphasizes the personal and professional development of the individual, utilizes activities that are designed by the staff and selected by each staff member, and receives the full support of the administration and local community. Experts in the field indicate that these are some of the necessary ingredients for a successful staff development program. Wayne Community College's experience says the experts are right!

Jim Thomas
Title III Director

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Suanne D. Roueche, Editor
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INNOVATION ABSTRACTS VOL. X NO. 2

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INTEGRATING COMPUTERS INTO THE CURRICULUM: THE PATH OF LEAST RESISTANCE

Integrating computers into college curriculum is not an easy task, and most community colleges in this country have struggled with the process. Some of the concerns surrounding computer integration into curriculum are timing, appropriateness, hardware, software, use, and funding.

Unfortunately, no one has provided the academic community with a step-by-step guide that answers all the questions and solves all the problems surrounding computer integration. Additionally, educational research and literature have not caught up with the rapid change in technology. The lack of "answers" and valid research present an element of "risk" that is unsettling for many educators.

Using Research To Limit the Risk

Utah Valley Community College—in spite of budget limitations—has taken a progressive stand on computer use in the classroom. The microcomputer is used not only in the traditional business curriculum but also in the technical areas of drafting, mechanics, engineering, surveying, architecture, and electronics. This progressive stance provided an environment for experimental research to be conducted before curriculum and computer integration decisions were made.

The Research Problem

To act or react? This is the question facing the Office Education Department at Utah Valley Community College and other college business departments that are realizing a need to update and replace equipment that has traditionally been used for the teaching of typewriting and keyboarding. New methods of teaching typewriting are being introduced. Office education publishing companies and computer software companies are marketing typewriting and keyboarding software for use in the classroom, and many high school business students are exposed to the minicomputer and accompanying software long before they enter college.

Lloyd Brooks, Professor, Office Administration at Memphis State University, reported in *Business Education Forum*:

> Minicomputers are here to stay. Business teachers need to become aware of their capabilities and limitations and begin preparing students to enter a business world where minicomputers are going to become a standard business machine, as important and common as the typewriter or the calculator.

With the apparent move in the industry toward office automation, the Office Education faculty at Utah Valley Community College found themselves faced with a number of unanswered questions. On the verge of making major equipment purchases, they needed to know whether they should purchase typewriters or computers. The purchase issue brought into play other questions more specific to curriculum: What is the best and most adaptable equipment to use in the teaching of typewriting? Can a student learn typewriting as well on a minicomputer as on a traditional typewriter? If a student is trained on a computer keyboard, will he or she be able to make a smooth transition from the computer keyboard to a traditional keyboard without significant loss of speed and/or accuracy skill? A research study was conducted to answer these questions.

Purpose and Design of Study

The study was performed at Utah Valley Community College, during fall quarter 1984 and winter and spring quarters 1985. Students in nine sections of skillbuilding typewriting participated in the term-long study.

The research was designed to answer the following questions:

1. Will skillbuilding typewriting students taught on the IBM PC achieve the same level of skill competency as the control group taught on the IBM Selectric typewriter?

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2. What is the transition effect when students taught on the IBM PC change to typing on an IBM Selectric typewriter?

Methodology

Nine sections of skillbuilding students with equal abilities in speed and accuracy were utilized in the experiment. Seven sections were designated as control sections, and two sections were designated as computer sections. Tests for homogeneity of variance were conducted using the Bartlett-Box F test, and no significant differences in entry level typing speed and accuracy existed between the sections.

A teaching guide was developed to standardize the classroom procedures and included daily lesson plans that were followed by teachers in all sections. During the first week of each term, students in all sections were given a series of pre-tests to determine the students' entry level typing speed and accuracy rates. Students then used a pre-determined scale to set speed and accuracy goals for the term.

A major difference between the control sections and the computer sections was the learning instrument. The control sections were taught on IBM personal computers. Another difference was the development of a "Timed Type" software package for use by the computer sections. The software was adjusted by the student for a specified number of minutes or seconds. The student was taught to activate the timer by hitting a series of keys. At the conclusion of the specified time, the package played a musical sound and locked the keyboard. Immediately the student's typing speed flashed on the screen.

The control sections did not have the benefit of instant feedback on speed. In the control sections the instructor used a stop watch to tell the students when to begin and stop typing. At the conclusion of all timed writings, the students calculated their speed manually.

Results

The findings of the study are based on the analysis of five variables related to the treatment groups: (1) goal words per minute, (2) 10-week post-test speed, (3) 10-week post-test error, (4) percent of speed goal achievement, and (5) percent of accuracy goal achievement. In addition, students in the computer test group were given further measures to determine the transitional effect of moving from the computer keyboard to a traditional typewriter keyboard.

At the conclusion of the study, an analysis of the data showed no significant difference between the two test groups in typewriting speed achievement on three-minute timed writings. The computer-taught test classes, however, were more nearly accurate. In addition, when students in the computer test group were moved from typing on IBM PC's to typing on IBM Selectric typewriters, they were able to maintain their speed and accuracy scores.

Implications

The research design of this study was developed to answer some very specific questions for the faculty in the Office Education Department at Utah Valley Community College. We were facing some substantial equipment purchase decisions and did not want to make a short-sighted decision. As is often the case, the Office Education faculty did not all "line up on the same side of the fence" on this issue. Some faculty members felt very strongly about continuing to teach typewriting on traditional typewriters, while other members of the faculty were willing to "risk" and to consider new teaching methodologies.

The use of experimental research, particularly conducted on-site, aided the decision-making process considerably. Faculty were willing to re-evaluate their decisions and became less resistant to changing traditional teaching methods when it was found that students performed as well on traditional typewriters as on IBM personal computers and that they could change from one teaching instrument to the other without loss of typing speed and accuracy. At that point, the decision was easy—purchase computers.

Nancy Smith
Office Education Instructor

For further information, contact the author at Utah Valley Community College, 800 West 1200 South, Orem, UT 84058.

Suanne D. Roueche, Editor
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A STRATEGY FOR SELECTING AND HIRING QUALITY TEACHERS

The selection and hiring of quality teachers is not an easy task. On the other hand, firing a bad teacher is an onerous and unpleasant exercise. No matter how well qualified an individual might be in his/her particular discipline or profession, those qualifications do not guarantee that this "expert" can teach. Because community colleges are institutions dedicated to the teaching/learning process, the selection and hiring of the best teachers available is crucial to their success.

Often, full-time faculty positions are filled from the ranks of the part-time teachers; they are "known quantities." But what about the unknown quantity—the person from out of town who applied for a full-time teaching position and appears, on paper at least, to be eminently qualified for the position? Recently faced with this dilemma, I consulted with the program faculty, and together we developed a useful strategy for selecting and hiring quality teachers. The program was Law and Security Administration, and the position was a full-time teacher.

The hiring committee consisted of Chairman of the Human Services Program, the Program Co-ordinator, and the three full-time faculty who teach in the program. Curriculum vitae were reviewed, and 12 apparently suitable applicants were to be interviewed.

All candidates would have to conduct a 15-minute lesson with the interview committee prior to the interview. This lesson would be evaluated by the group. [The candidates were given one week's notice, prior to their scheduled interviews, that they would be required to teach a 15-minute class; by design, the words "presentation" and "performance" were not used.] The following Instructional Delivery Skills would be measured:

— The objective of the lesson was clearly stated.
— Examples were used to clarify abstract or difficult ideas.
— Method of presentation used was appropriate to the type of material covered.
— Teacher presented alternative and/or opposing views.
— Teacher used appropriate support materials.
— Major points were summarized.
— Material presented was up-to-date.
— Material was presented in an organized manner.
— Material was presented at an appropriate pace.
— Voice level and tone were appropriate.
— Handwriting was legible (chalkboard or overheads).
— Mannerisms enhanced (or did not distract from the presentation).

At the actual interview, the candidates would be asked six questions, with each member of the committee asking the same question at each interview. An "ideal" answer to each question was agreed upon by the interview committee, and the applicants were scored on each question via grading sheets (listing the instructional delivery skills checklist and the interview questions, with appropriate spaces for grading and comments).

The micro-teaching sessions were creative; they gave the applicants a chance to show what they could do. More importantly, it gave us a chance to identify the *real* teachers!

Barrie J. Saxton
Human Services Program

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DICTIONARY ENHANCED TESTS

It is an academic given that classroom exams are fraught with a host of potential bugaboos that may negatively impact on test bias/validity. As a partial means of limiting some test-gremlins, I have encouraged my students to use a standard English dictionary while taking exams. The dictionary-enhanced test has resulted in a number of benefits for both myself and the students.

As for test validity, it may reasonably be assumed that students come to the test with varying levels of general vocabulary sophistication. Interestingly, the words that students commonly look for are not necessarily technical in nature, but rather they are "everyday words"—e.g., "ambiguous," "virtually," "condone," "complimentary." For the English-limited students, the use of a dictionary tends to flatten out differences that appear between their test scores and those of the more English-proficient students. It is more likely then that incorrect answers reflect a lack of course knowledge rather than cultural/language background experiences.

Relatedly—and unfortunately—some instructors [myself included] tend to use a lecture vocabulary and a somewhat different written vocabulary—i.e., exams. The latter vocabulary sometimes can reflect a tendency toward the use of esoteric words or phrases. After tests I survey students as to the "difficult" words/phrases they looked up, and I often then revise my test questions to make them both clearer and fairer. Naturally, students who choose to use a dictionary during exams are able to look up course terminology. This is an acceptable activity; I consider an exam to be a further learning experience, as well as a differential measure of knowledge. But I should point out that for the comprehensive final exam, dictionaries are not permitted; I've assumed dictionary-aided-learning has taken place.

In addition to considering the dictionary-enhanced tests as fairer and more valid than more traditional tests, students report that test anxiety is somewhat lessened by the security a dictionary can provide. As one student phrased it, "I'm not going to the test all alone!" Students have also commented on some spillover effects of the dictionary "requirement"—the purchasing of a *first* dictionary and its use in other settings—e.g., lectures. I was pleasantly surprised!

A concern, voiced by colleagues, involves the matter of "cheating"—students may be tempted to write test answers in the dictionary. After fifteen years of dictionary-enhanced testing, I've concluded that this is a non-issue! I have randomly checked dictionaries and not once found any crib notes.

Another concern is whether or not student test grades are enhanced with the use of a dictionary. The answer is "Yes" and "No." On the affirmative side, a study of matched groups of students [G.P.A.] revealed a 2-point test score differential favoring the dictionary group [35-item test]. On the negative side, a study of dictionary-users versus non-users revealed a 3-point test score differential benefiting the user group. However, when comparing G.P.A.'s of the two self-selected groups, it was found that those students with higher G.P.A.'s had opted for using the dictionary, while those with lower G.P.A.'s did not use a dictionary. This result seemingly confirms the adage that "one preaches to the converted."

Encouraging student use of a dictionary during exams is not a revolutionary teaching idea; but in a small way, it may be an improvement in achieving testing accuracy. And to listen to students, there is room for improvement.

Mark B. McKinley
Psychology Professor

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INNOVATION ABSTRACTS VOL. X NO. 4

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FACULTY INVOLVEMENT: THE KEY TO SUPPORT SERVICES SUCCESS FOR THE DISABLED STUDENT

The Center for Educational Services for the Handicapped at El Paso Community College provides a variety of support services to disabled students—tutoring, notetaking, signing, interpreting, writing, reading, financial aid assistance, counselling, help with registration, career workshops, provision of and instruction in the use of adaptive equipment, and computer-assisted instruction. In this age of service delivery specificity, this comprehensive multifunctional program is an exception.

In order to provide the best possible service to disabled students, it is imperative that the Center accomplishes the following: publicizes, recommends, and implements tutorial strategies in a timely manner; establishes communication among student, instructor, and tutor to identify class requirements and to involve the instructor in the support service plan—whether it involves tutoring only or the entire range of support services. The Center for Educational Services is designed to enhance student success, but it is careful to avoid infringing upon student privacy or denying students the right to make individual decisions about how they wish to receive services.

The Initial Contact

When a student comes to the Center for Educational Services for the Handicapped, he/she meets with a counselor and receives a student handbook which details program services and policies. After consultation with the counselor and identification of special needs and responsibilities, the student signs an agreement to accept the appropriately named support services.

Classroom Observation

The support service staff person then goes to each of the students' classes to collect pertinent information regarding his/her academic needs. Prior to the first observation, the instructor is given a flier which explains the observer's role.

The observer is there to watch the student's reactions in class and to determine his ability to participate in class work, making these observations as unobtrusively as possible. Observer and instructor are involved in the design of an appropriate tutoring plan; the plan is then given to the tutor. (At times, faculty will question the instructional adaptations that must be made for the student, so the system must be sensitive to the role of the instructor and create as little interference with regular activities as possible.)

The Tutoring Plan

The tutoring plan includes this basic information: the student's name, class, class time, room, instructor's name, instructor's office and extension numbers, the tutor's name, and the tutoring time. This information is provided to facilitate tutor/instructor communication. The plan further identifies tutoring goals, materials that will be used, and tutoring procedures. The observer gives a copy of the plan to the tutor and to the instructor.

Consultations with instructors are continued on a "needs" basis only, initiated by the tutor or the developmental education instructor for the Center or the classroom instructor. For example, an instructor may contact Handicapped Services for help with evaluating the appropriateness of a specific test for a disabled student.

Evaluations

At mid-term, student checklists are sent to instructors. These checklists offer instructors an opportunity (1) to evaluate the support service staff in their classrooms, (2) to report major academic needs of disabled students heretofore unidentified and/or served by the Center, and (3) to report the additional needs of those students already availing themselves of the Center's services. At the end of the each semester, students

evaluate the services they have received. Support service staff persons are evaluated at the end of each spring semester.

Staff Training

As have other service programs for the handicapped, this program with large numbers of students and part-time employees has developed an extremely flexible service delivery system with a high emphasis on *staff training*: ongoing training is given to support service staff through individual consultations with the program coordinator and/or the developmental education instructor; handouts on tutoring techniques are shared with staff; teacher panel discussions at staff meetings emphasize the instructor perspective and provide an opportunity for a friendly exchange of viewpoints between instructors and support service providers; handbooks provide policies and procedures for notetakers, tutors, readers, writers, and sign language interpreters; training videotapes will soon be available to clarify policies, procedures, techniques; staff development workshops give staff hands-on training with equipment, presentations to foster communication skills, and techniques to improve quality of services; and staff attend panel presentations by key members of various agencies working with disabled persons.

Information Services

Instructors routinely receive fliers that describe the various support service roles, handouts that address such issues as classroom testing for disabled students and teaching mainstreamed deaf students, and other descriptions of the services that may be arranged through the Center. Presentations (upon request) are provided to instructors at regular staff meetings and staff development workshops. These presentations are tailored to address such specific needs as reading instruction and the use of adaptive equipment.

Instructors are encouraged to contact Handicapped Services with their questions and concerns about disabled students in their classes, but no specific information about individual disabled students is disclosed without the student's written consent. Many instructors report that the information they receive from Handicapped Services assists them with all students, not only with those who are disabled.

Instructor Responses

Instructors have responded positively to support services personnel; they have supplied texts, visited the tutoring lab, given suggestions, and communicated with both the developmental education instructor and the tutor about the progress and academic needs of the disabled students they teach.

This support service model has streamlined the coordination between student service providers and faculty, and it has resulted in two measurable benefits: a lower attrition rate (a 10% increase in class retention when comparing the fall 1985 semester to spring 1986) and a higher course completion rate (a 25% to 11% decrease in class failures as reported by instructors and students for the same time period).

Ann Lemke
Program Coordinator

Joyce Whiteside
Developmental Educational Instructor

For further information, contact the authors at the Center for Educational Services for the Handicapped, El Paso Community College, P.O. Box 20500, El Paso, TX 79998.

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INNOVATION ABSTRACTS VOL. X NO. 5

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HEALTH 21/COUNSELING 10: A PARTICIPATORY ADVENTURE

An exciting, demanding and intense three-week course was offered to Palomar College students this summer: Health 21 (Health Educational/Fitness) and Counseling 10 (Quest for Identity).

Nineteen students were on campus for 60 hours in preparation for our sojourn into the wilderness of Yosemite National Park. By combining a self-awareness class with a health and wellness class, we (the two instructors) hoped to give students a comprehensive look at themselves and an opportunity to improve their physical conditions. The purpose of trekking in Yosemite was to give students a "real life test" of what they had learned in the classroom. In the wilderness, students and instructors cooperated as a team for several days—preparing meals, eating, sleeping, hiking and entertaining one another around the campfire.

Our basecamp in Yosemite was the Tuolumne Meadows area which provided trailheads to spectacular high alpine sites for day hiking. We ventured to the beautiful white cascades and emerald pools of Glen Aulin, climbed to the top of Lambert Dome, and relaxed and swam in the High Sierra waters of Dog Lake. These first hikes were moderate and enjoyable; however, the last hike was chosen as a special challenge. Our final destination was Half Dome, a crest of granite rising 4,737 feet above the valley.

Our group began this strenuous hike in the early morning, first climbing the scenic and steep mist trail to Vernal Falls, through a forest of red firs and Jeffrey pines, and still further up two dozen rocky switchbacks before confronting the intimidating Half Dome cables. These cables ascended for a quarter mile up a 45-degree angle and provided us with a superbly frightening view down the dome's 2,000-foot face. Eighteen students made it to the base of Half Dome, and 14 others completed the arduous climb to the summit. High altitude, blazing sun, a limited supply of water, and the threat of rattlesnakes all contributed to the endurance test of this hike. During the descent from the Dome, one student suffered a sprain and had to be carried for three miles to a ranger station. Courage and compassion were required of the instructor and students in assisting the injured student.

Removed from familiar environments, students gained a wealth of new perceptions. Regarding their learnings from the wilderness outing, students wrote: "I learned

— about my inner strength and ability to overcome fear."
— about group dynamics, leadership, good planning and how strong I really am."
— that support is the main ingredient in making a person want to succeed."
— how to cope with things I didn't like."

Students gained a greater awareness of human life and their dependency on the lives of others. They realized it was the encouragement of the group that motivated them to succeed, whether it was to reach the summit or to finish dinner cleanup. In the intrigue of the mountains, they were *more* than 19 individuals; they were a group that had formed a significant bond.

Realization of their unlimited capabilities was another dimension of growth. Students experienced pushing beyond previous limits for physical endurance as they ascended the 5,000 feet to make it to the Half Dome summit. As one participant commented, "I found how hard I really *can* push myself. I feel I can do anything I set my mind to." Reaching a difficult goal gives students the knowledge and confidence that aspirations can be attained. Health 21/Counseling 10 presented students with personal challenges requiring cooperation and initiative—learning experiences that can be translated handily to everyday life.

Maria S. Miller, MFCC
Palomar College

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THE TEAM APPROACH IN HEALTH CAREERS

The McLennan Community College Health Careers programs include six health care disciplines, utilize six hospitals and a number of private clinics as clinical education centers. Hospital administrative personnel solicited our help in creating an articulation process among their future employees. Administrative personnel sought to begin a process which would strengthen the quality of health care delivery and cut costs without sacrificing patient care. The clinical agencies thought that giving students insight into the duties of personnel outside their own departments, they would become employees with an interest in more efficient business operations.

Consequently, one of the MCC Health Careers goals became clearer—to give our students a better understanding of the duties performed by other members of the health care team so that communication among the groups could be more easily accomplished. There were two problems:

1. How could we get students from six different programs to interact with one another?
2. What type of educational activity could we offer that all students would find stimulating?

Directors of Associate Degree Nursing, Licensed Vocational Nursing, Radiologic Technology, Respiratory Therapy, Medical Laboratory Technician, and Physical Therapist Assistant programs were asked to suggest solutions to our dilemma. We created a unique program which our students found not only educational but entertaining and stimulating as well.

Effective initiation of communication among the students would follow a three-step process. *First*, a series of vignettes depicting typical health care interactions was presented, with faculty serving as the "actors." We chose to depict the progress of a victim of a motor vehicle accident through the emergency room, the critical care unit, and the regular patient care unit. The scenarios involved players related to each of the six health care disciplines taught at MCC. Faculty members also portrayed the physician and the patient. Our purpose was to act out situations in which everything that could go wrong, did go wrong. Each player was given a role which purposely interfered with other roles from the other health care groups. Though the students found these sketches to be humorous and entertaining, they clearly saw simulation of real-life incidents which frequently occur in a typical hospital setting. For example, the ER physician ordered numerous tests and procedures on the patient, such as chest x-rays, blood tests, respiratory therapy, and IV infusion. All the members of the health care team arrived to perform their duties at the same time. The radiologic technologist was last to get to the patient; yet when the ER physician came back on stage, he demanded the chest x-rays immediately. We wanted to emphasize that because of a lack of communication, tempers flared and work was inefficient.

Second, students completed a questionnaire about the scenarios (during a short coffee-break intermission). Students from the various programs wore color-coded name tags and were instructed to solicit help from one another in completing the questionnaire. Typical questions were: "What is an H & H; and why is it ordered?" and "Why should a chest x-ray be done with the patient in an upright position?"

Third, students discussed the questionnaire and the vignettes. The moderator asked students for responses to the questions and for reactions to the roles played by each of the actors in the sketches. They had lively exchanges about their respective duties and about how the team approach could have improved communications in the workplace.

Post-workshop evaluations by the students indicate that the faculty goal was accomplished. Because open communication took place across all disciplines, the students left the auditorium with a new respect for the various roles in health care delivery.

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Suanne D. Roueche, Editor
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CO-OPING WITH HIGH SCHOOLS

Response to Changing Community Needs

Recent economic changes in states such as Texas have forced educational institutions to re-examine how they can meet student needs effectively and economically. School districts, where growth of new programs and the addition of physical facilities to accommodate them seemed virtually limitless, find themselves making difficult choices as they adjust spending to stay within local and state budgetary cuts. North Harris County College (NHCC), a suburban community college in the Houston area, and Spring Independent School District (SISD), one of its feeder-school districts, are working together to find a solution that will provide a quality automotive technology program for high school students.

Recognizing a Need

When SISD planned for the 1986-1987 school year, administrators realized that facilities must be added to accommodate vocational-technical programs. Classroom space was allocated based on a proposed building to house automotive technology. Sharp increases in construction costs and decreased state allocation of funds for building soon precluded the building program. At the same time, NHCC vocational and technical planners looked at similar budget constraints. Although they faced no shortage of space, they did realize that the continued success of their program required expensive updating of equipment. Administrators began a series of negotiations to determine whether a cooperative effort might allow students to pursue training in an area where there is a strong local job market. Transfer of the program to the college campus would free high school classroom space for other classes and reduce expenditures for capital equipment and instruction. It would allow SISD to honor its commitments to other programs while indirectly funding equipment purchases at the college.

Negotiating an Agreement

Fall, 1986, was the first semester for the shared program to be in place. The contract provides that a maximum of twenty first-year and twenty second-year automotive students in high school will come to the college campus for the automotive technology training. SISD had a total of fifty-six students interested in the first-year program. The final selection of twenty students was determined by the district. Those who are in the first year of the program meet for three hours and twenty minutes for three afternoons per week.

The introductory courses in the first two semesters are enhanced versions of those taught at the college to college students: Mechanical Practices and Auto Engines I. The textbook selection was compatible with both the high school and the college curriculum. Minor adjustments in course content were made to ensure that the new courses would include all essential elements as defined by the State for secondary classes. High school senior students who had completed these introductory courses in high school were eligible to enroll in one of three selected auto courses meeting in the evening for six to eight contact hours per week. The college reserved five slots in each section for these contract students. As part of the pre-enrollment process, each advanced student was asked to select his first, second, and third choices. All students were placed in either their first or second choice.

In addition to monies paid by SISD to the college and designated for capital expenses, supplies, and instructor salaries, the district also provides students with textbooks and tools. The original plan included SISD's busing students to and from the two high schools (close to the college). However, students have requested and been allowed to form car pools. The only expense for students enrolled in this program is transportation. There are no college charges to students for tuition, supplies, or fees. As a result of this joint effort, SISD anticipates significant savings for 1986-1987. The capital expense money has been used by the college to purchase more equipment for the automotive lab. This equipment can and will be used by all students enrolled in NHCC automotive classes.

Earning Academic Credits

The first-year contract automotive students can earn credits while enrolled as high school students (credits accrue toward an Associates of Applied Science degree if they meet stated requirements). These college

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credits are valid when students successfully complete the second year of the automotive program at NHCC, graduate from high school, and continue their education at NHCC. The first-year students will then receive retroactive credit for the courses they completed in their junior year.

The second-year students are participating in the early admissions program. Since the state reimburses the college for these students' instruction, SISD pays only tuition and fees. Students receive dual credit for both high school and college; one credit does not replace the other. Depending on the courses a student chooses to take during the second year of the automotive technology program, he/she can earn as many as twenty hours of potential college credit as a high school student.

Getting Started

In an effort to explain the program and the educational situation for SISD students and parents, the NHCC instructors and administrative personnel sponsored an open house for students and their parents before the semester began. The informal session allowed the college to share what it had to offer and to review the academic and behavioral expectations it had of students. Parents had an opportunity to ask questions about how their students would fit into the college environment. Parents expressed concern about whether it would be appropriate for their young students to attend classes with adults and to finish class at 10:00 p.m. when they were enrolled in second-year classes. There have been no incidents during the semester to indicate that either concern was warranted.

One concern of those involved in arranging the cooperative program was whether it would be burdensome to the college and the school district to keep the varied records required by different state-level supervising boards. So far, this recordkeeping seems manageable. The classroom instructors check attendance and report regularly to SISD; SISD office personnel transfer the information to state reporting forms. It is SISD's responsibility to determine whether student absences are excused and to inform the college if the student is eligible to make up work. Grades for first-year students are reported in letter and number form since district grade ranges are different than those of the college instructors. The district makes the appropriate adjustments. Second-year students receive only letter grades. If academic or behavioral problems arise, the institutions have agreed that no unilateral action will be taken toward disciplining a student; students will be counseled by both high school and college officials. The first-year students attend class three days per week in the afternoon, and their dismissal time does not coincide with the public school schedule. Second-year students attending evening classes meet a total of six to eight hours per week on two evenings.

Evaluating Response to the Initial Semester

An unexpected but very positive outcome of the program has been that students are apparently transferring their college-appropriate behaviors to their high school environment. Students report that while they are learning responsibility in the automotive lab, they are also applying this discipline to the academic courses in high school. Their grades in other classes are improving. A recent survey of students revealed that students were positive in their assessment of the program. They found the quality of instruction beyond their expectations, enjoyed interaction with older students, and appreciated the responsibility they had as a student in a college environment.

College personnel involved in the program are enthusiastic about its initial semester. It has allowed a strong and successful program to make a different contribution to the community it serves. Co-oping between the two educational entities has allowed for purchase of more equipment for all students and will likely serve as a recruitment tool for the AAS program in automotive technology for those students interested in developing better skills before entering the job market. Administrators are currently investigating similar cooperative efforts with SISD and other feeder-school districts. Electronics, welding, and child care seem likely areas where pooling of resources, instructional facilities and personnel could reduce costs while meeting the needs of area students who want and need vocational training.

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Developmental Studies	Automotive Instructor	Applied Technology Division Head

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CULTURAL IMMERSION AND DEVELOPMENTAL EDUCATION

At Community College of Philadelphia, English teachers in the developmental programs have some goals that are frequently aired and shared, readjusted and monitored, in department meetings. These goals form a familiar litany: main ideas (either identified, or formulated), supporting details (to be distinguished from main ideas or written in distinguished ways), and such miscellanea as complete sentences and the final "s" used as it was in sixteenth century England. These literacy goals form entrance and exit criteria for a year and a half of developmental writing and reading courses, for we have discovered that no matter how directly we tackle these skills, students need to read and write a lot before they grow. We also have discovered that literacy skills, by themselves, encourage a narrow conformity.

Three years ago a small group of us—who were stressing the humanities (in our developmental courses) in what we thought were exciting ways—wanted to proceed more systematically and reach out to our colleagues. We created a program that depends on the voluntary participation of teachers; we set themes for a semester, and they can use one or all themes and accompanying sets of materials, as they desire. At the beginning of the semester, the faculty coordinators give all English teachers a schedule of educational/cultural events; during the semester we use a Teaching Center to disseminate newsletter articles and flyers advertising new materials and to arrange exhibits and displays of articles and books.

Curriculum Goals

We established three clusters of curriculum goals. *The first cluster of curriculum goals involves learning to learn.* Basic skills are part of this process, but we have acknowledged that students need to practice these skills on meaningful content. We seek to develop more sophisticated skills which stimulate independent thinking: e.g., (1) considering and evaluating alternate points of view; and (2) being alert to the exact choice of words, their connotations, the power of figurative language. We want students to question the underlying implications of texts rather than merely responding to surface meaning. To help teachers integrate these process goals of thinking, reading and writing, we create exercises which use the subject matter of the programs (context-embedded practice) and write sequences of discussion, short answer and essay questions to accompany texts.

Independent thinking also applies to the process of learning standard English. We want our students to analyze this process and to understand the "origins, nature, diversity, function and effects of language." To achieve these ends we have encouraged the teachers of even the most remedial students to discuss this history of the English language. We encourage this by providing handouts with Old, Middle and Shakespearean language side by side and essays that discuss the role of conquerors (like William) in effecting language change and prestige. We also have invited colleagues to use their acting talent in Old and Middle English. We invited William Labov to discuss dialects with our developmental students, and that semester we taught scenes from Shaw's *Pygmalion* and showed the movie *My Fair Lady*.

The second cluster of curriculum goals involves student experiences. One vehicle for this goal has been for students to read plays, act out scenes, and see professional performances. Words come alive and are powerful; students often identify strongly with certain characters. We usually highlight one play a semester so there is plenty of time for background materials; and we choose plays, such as Graham Greene's *Power and the Glory* and *The Diary of Anne Frank*, where historical context enriches the meaning of the play. When students attend a professional performance for the first time, their written reviews reflect an active participation in an event. Trips to museums produce keen interest.

We tie experiential activities to skills involving reading and writing. One project involves our students reading aloud to children. We have invited outstanding public school teachers to come and talk about ways adults can interact with children to help them learn; then each student reads to a child a number of times. Written reports of this experience almost always reflect pride—both explicitly in what the student says and in the careful presentation of the paper.

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The final cluster of curriculum goals involves content. When we choose our speakers, plays, books, and articles, we are primarily concerned about subject matter. We want themes—not discrete random units—that will involve the students for weeks at a time. An analysis of our programs and materials since 1984 reveals three major trends: a bias in favor of Afro-American materials; a focus on classics in Western European heritage; a respect for the diversity represented by third world cultures.

We choose works because of the richness of the conflicts and resolutions within them and because they are about well-known people, by well-known people, or because they help students from frameworks of historical or geographical knowledge. For developmental students particularly, their repertoire of background information often limits their ability to comprehend what they are reading. To discuss the phenomenon of becoming "well-known," we have had a folklorist from the University of Pennsylvania discuss the changing concept of heroes from Achilles to Luke Skywalker; we have provided material on a variety of Greek myths. Developmental students have argued about Helen of Troy, Achilles and Odysseus; and while one student would have "given her red dancing shoes" to have been Helen, most judged all three fairly harshly after setting out their own criteria for hero or heroine. Students were also fairly skeptical about how Oedipus's problems applied to their own personal urges (even, or especially, after reading an essay by Freud), although the students did enjoy the gospel music of *Oedipus at Colonus*. We have read works by Dickens and Tennyson, Yeats, Auden and Arthur Miller. We have had extended units on evolution and dinosaurs, on World War II and the Holocaust.

We value the diversity of world cultures. This semester we promoted examinations of Africa, Cambodia, and Maya Indians. Grant monies brought Ali Mazrui to C.C.P.; he created the PBS series *The Africans*. Our program provided 300 students, in developmental and in college credit courses, with materials written and edited by Mazrui, newspaper articles condemning and praising his series, and study materials to make the articles useful in a variety of English courses. Our Student Activities Office booked Dith Pran, the survivor of the killing fields of Cambodia; our Cultural Series coordinators supplied newspaper articles on Dith Pran, an essay by a Cambodian student who also lived through Pol Pot's regime, and arranged for a Cambodian student to talk with other students. This semester students wrote an essay defining the word "civilization" and discovered enough information about Maya Indians to form strong conflicting opinions about whether the Maya were "civilized." In the past three years we also have prepared extensive units on South Africa, Ethiopia, Vietnam and El Salvador.

Conclusion

Our goals for developmental students have changed the instructional strategies in our courses. Years ago students worked on writing skills in courses where their own essays were the primary text. Separate reading courses emphasized critical analysis, yet the textbooks offered a variety of short, unrelated essays. Content courses were taught by different teachers of history, geography, and psychology.

Today, English teachers teach both reading and writing courses to the same students; we teach in clusters with the content teachers and use their textbooks, if we want, as our reading text. We have decided that we want significant content in our own classes with texts and themes *we* decide upon. We *integrate goals* of basic skills, independent thinking, greater knowledge and appreciation of the world in each class, ideally within each thematic unit. Our classroom discussions become educational experiences valuable in themselves and as preparation for further learning. Our Cultural Series allows teachers to grow by sharing materials, insights, problems and solutions. We challenge ourselves while we challenge our students!

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IMPROVING STUDENTS' CHANCES FOR ACADEMIC SUCCESS

Laredo Junior College recently reviewed its academic practices, and the outcome resulted in various revisions designed to improve students' chances for academic success. The impetus for the review process was a result of the Pre-Professional Skills Test mandated by the Texas Legislature and effective May 1984. The P-PST, a reading, writing, and mathematics examination, is required for entry into junior-level teacher education programs; and its purpose is to assure basic literacy skills of these entering students. Early statewide results of the testing program indicated that about eighty percent of non-minority candidates were successful on all three exams, but only about forty percent of minority candidates were successful. Results of education majors enrolled at Laredo Junior College, whose enrollment is approximately ninety percent Hispanic, mirrored the state results of minorities. Local evidence indicated that practically all of those taking the examination had successfully negotiated all or most of the two-year college-parallel curriculum yet remained deficient in basic academic skills.

Prior to the P-PST, research indicated that our transfer students were performing satisfactorily at their transfer institutions, and we were satisfied with this limited data as proof that we were performing adequately as a community college. Nevertheless, we were well aware of the prolonged decline of entrance scores of freshmen and the concomitant decline in their college-level skills. We agreed, unofficially, that our college courses had become diluted over the years and that our graduates were less prepared than in previous decades.

In 1985, shortly after the initial P-PST results were available, the Laredo Junior College faculty and administration decided to review its current academic practices and, if necessary, design and implement policies and procedures to improve scholastic excellence and enhance students' chances for success. That review focused on various practices common to community college education.

Traditionally, the typical entering-freshman at Laredo Junior College, located in Laredo, Texas on the Mexican-American border, reads at about the eighth grade level and scores in the lowest twenty percent, nationwide, on the American College Test. Consequently, the college has a long history of developmental programs in English, mathematics, and reading. Unfortunately, students have progressed through the developmental curriculum and entered college-level courses with skills that remained below the freshman level. In numerous instances, students were allowed to enroll in lower levels of reading and writing, along with courses in biology, history, psychology, and other transfer disciplines. With the exception of freshman English, transfer mathematics, and allied health programs, there were no academic entry criteria for the various disciplines or programs on campus.

The question arose: How do faculty members teach college-level content and skills to students with literacy skills at the eighth, ninth, or tenth grade level? The consensus of the discussion and review process was that the current placement policy, along with exit requirements from developmental courses, were inadequate to maximize students' subsequent scholastic success. The decision was made to attack the problem with a three-pronged approach. *First*, standardized exit requirements from developmental courses were implemented. *Second*, students were required to demonstrate freshman-level academic skills via mandatory assessment before entry into transfer disciplines or programs. *Third*, college-wide policy requiring increased writing assignments and essay examinations for all students was implemented. In addition, it was decided to establish minimum entry criteria for non-transfer curriculum. The entry criterion would vary according to the perceived academic demands of the specific discipline. Systems to support the increased scholastic standards would be necessary to maximize success.

It was obvious the college could not reasonably achieve its goal from one year to the next without severely disrupting enrollment patterns. Therefore, it was agreed to implement the system over a four-year time frame, with fall 1989 as the target date for full implementation. However, if enrollment declined significantly, the administration would retain the prerogative to adjust the standards to a more manageable level. It was also obvious that the evolving system for student success must incorporate a multitude of

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personnel from various departments and divisions within the institution and that coordination at all levels was mandatory for success. An associate dean was appointed during the initial year of the program to fulfill that role.

A minimum reading level of eighth grade was implemented during the first year of the program, 1986-1987. Students reading from the minimum to the tenth grade level could enroll in a transfer course if they also enrolled in reading. In addition, students placed in the two lowest developmental writing courses could not enroll in a transfer course. However, those who placed in the two highest developmental writing courses could take college-parallel courses along with writing. Some disciplines had a third prerequisite, mathematics. Minimum requirements were also established for most of the one- and two-year terminal programs, which had no entry requirements. Initiation of the program did not adversely affect enrollment as speculated. In fact, enrollment increased during the 1986-1987 academic year about five percent over the previous year!

Starting in the fall of 1987, entry requirements will increase for all transfer disciplines and most terminal programs. For example, only students at the upper course level of developmental writing may enroll in a transfer course and only if concurrently enrolled in the writing course. Students reading from the ninth to the eleventh grade level must enroll in reading; otherwise, they cannot take a transfer course. Those reading below grade nine are prohibited from the transfer curriculum. Entry criteria will increase by one and one-half grade levels during the third year, 1988-1989, and will increase to the twelfth grade level for the fall of 1989.

Students scoring below the entry criteria on the assessment battery are advised into the developmental programs. Currently, there are five levels of reading, three of English, and three levels of developmental mathematics. Each developmental course has exit requirements that are assessed in much the same way as the initial assessment. This standardized end-of-course assessment helps insure that students have learned the skills appropriate to the course and are ready for the next course level.

To supplement the increase in scholastic requirements described above, the college decided that supportive programs to further enhance students' chances for success be implemented at or near the point of college entry. A one-hour pre-enrollment orientation program and a faculty advising system were therefore initiated during the 1986-1987 year. Completion of assessment is required prior to attending an orientation-advisement seminar. The orientation program is in addition to our long-standing human development program required of all full-time freshmen.

The orientation program provides students with a group interpretation of their assessment results, information on programs of study, general placement criteria, the advisement and registration process, tips on class scheduling, and so forth. Advisement immediately follows the orientation session, and students with declared majors are individually advised by faculty in the declared disciplines. Those without majors are advised by counselors, and follow-up career development activities are scheduled throughout the semester. The orientation-advisement seminars for entering freshmen are concentrated during the one-week period several weeks prior to the start of classes. Eligibility to register early, immediately after advisement, is a primary factor in the program's success.

In summary, some Laredo Junior College freshmen are prepared for college-level courses, and they deserve instruction at that level. Others are deficient in their academic preparation and are prohibited from the transfer curriculum. Students in the latter group have the opportunity to improve their basic skills via mandatory preparatory work and progress to college-level courses in subsequent semesters; it is anticipated that their chances for academic success will be significantly improved. Additional systems to support achievement have been implemented and must be monitored, refined, and supplemented in the future.

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WALKING ACROSS THE CURRICULUM

Purpose: Creating Awareness

After being inundated with memos, lectures, and articles urging campus-wide involvement in writing across the curriculum, the English department decided to take a different approach and to send our composition students "walking across the curriculum." The activity allowed students, who were suffering from mid-semester blahs, freedom from the classroom and allowed instructors a chance to revitalize. Observing participants enjoying themselves and learning, simultaneously, rewarded both the instructor and the student.

Because of our success with this activity and its adaptability, we invite others to participate in a similar learning experience. It is imperative that the participating instructors must enthusiastically set the stage. Prior to the activity, we alerted campus personnel and requested their support.

A Memo Alert: To Faculty and Staff

Be prepared to be invaded by composition students walking across the curriculum. This activity teaches the student about Barton County Community College. Part of the activity, "The Mount Olympus Quest," includes their meeting division chairpersons. Be supportive in signing their papers and answering questions. The activity will take place Tuesday and Wednesday, October 27th and 28th. The purpose, besides being informative, is to teach students to word directions specifically and to follow them implicitly. Thank you for your support.

Directions for Activity: To Students

In pairs, follow the Mount Olympian guide as you "Walk Across the Curriculum." You MUST complete your quest and present the required evidence to your mentor. Take writing equipment and a dictionary. If you get lost, go to the library and research the unfamiliar terminology. If you need more than one hour to complete the quest, you must do so *before* the next class session.

THE OLYMPIAN QUEST

1. Circle the cartographer's concept of the campus quad. State exactly where one locates this representation. *(A map of the campus)
2. Proceed to the Temple of Zeus. (The administration building) This sanctuary protects the higher gods who direct the progress on intellectual, social, and maintenance levels. Enter sanctimoniously. Locate the parchment and record the first complete sentence. (Aristotle says, "Know thyself.") Leave this temple reverently.
3. Turn to the east. Enter the next temple using the portals. Find Anaximander's haven. (The planetarium) Chronicle verbatim the posted data concerning public presentations.
4. Venture further into the temple. (Science & Math building) Locate and record the identifying digits on the portals leading into the graduated amphitheater similar in arrangement to Aristotle's lyceum. (S-118) Then have Pythagoras' kinsman, a god in this temple, initial your paper. (Division chairman)
5. Using the egress which opens toward the east, follow the walkway south and enter the temple of technology where priests ascribe to the infallibility of recording and regurgitating data. (Technical building) Ask the master of this phenomena or the god of this temple to initial your script. Pass through the portals and continue following the walkway. (Computer director or division chairman)
6. Enter the temple of creativity where geniuses vie for recognition. Request the signature of one who received laurels for his expertise in the Odeum. (Division chairman named Band Master of the Year) Continue exploring until you reach the inner sanctum, genuflect, and sign your name in the Book of Knowledge. (The chapel) Retrace your steps, and in the atrium record the name of the artist whose works hang on the walls.

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7. Pass through the portals and go toward the next edifice where spectators enjoy bread and circuses. (Student Union) Inside heralders blow their trumpets and proclaim their messages. Return with the names of two such personages. (Communication personnel)
8. Exit and follow the path to the west. In the next temple lesser gods expound the theories of Plato and Freud, history and economics. (Classroom building) Others prepare scholars for public services. One major god governs the area of recordkeeping while a goddess rules the area of interest to Hippocrates. Find the throne of another goddess who bestows laurels on academicians. Return with evidence of your meeting these gods. (Division chairpersons)
9. Proceed to the pleasure dome, where the gods please spectators and the academicians cheer the contenders. Within these confines, Olympians, motivated by images of majestic proportions, train. Inside this temple identify the facility where natant athletes compete. (Swimming pool) Here rules the Olympian director of games—"Big Mac." (Athletic director) Have him or an appointed proxy initial your paper.
10. Perambulate toward the hub of the quad. (Library) Enter the pillared structure and find the lexicon positioned on the circular wall surrounding the recessed area that houses recent periodicals. Using this lexicon locate the word Decalogue which pertains to Mosaic laws. Copy the complete explanation. Here the quest ends; return to the classroom.

*Identifications appear in parenthesis.

Follow-up Activity: THE OLYMPIAN TRIUMPH

Rewrite the directions specifically, explaining unfamiliar words, and describe the learning process involved. This reaction paper will be due at the beginning of your next class session.

[Prior to the activity, we alerted campus personnel and requested their support in making the quest a positive experience. As a result of this activity, we sparked enthusiasm not only among our students but also among colleagues and staff. Others have requested more specific involvement of their discipline in future activities.]

Student Responses

— "First I expanded my vocabulary by fighting through the instructions, and I sharpened my ingenuity by making analogies. Next, I discovered the entire campus and met the friendly faculty."
— "I used a dictionary and learned the importance of this tool."
— "I explored places on campus perviously unknown to me and met new people."
— "I liked watching other students try to locate various places after I finished. I learned I was more outgoing than I thought."
— "We reaped the rewards of an improved vocabulary, thought process, and imagination."

Reassessment

From observation, we suggest these adjustments for a more successful adventure:

1. The arrangement of the clues should be varied, possibly providing four forms (depending upon class size). Variation would discourage the mass from following a leader.
2. We learned to emphasize the purchase of a collegiate dictionary rather than the usual pocket edition.
3. Group effort appears much less threatening than individual effort and that involving both the physical and the mental process in an activity refreshes the student.
4. The camaraderie that occurred in designing and implementing the activity cannot be measured.

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LET'S JUNK THE LETTER GRADING SYSTEM

Nothing quickens the pulse and stirs the passions of college-level educators quite so much as controversy over grading policies. Inevitably, traditionalists point to "grade inflation," citing that more and more students are making higher and higher grades. Inevitably, they are opposed by the often younger antitraditionalists who scoff at the importance of grades and argue that intrusion into the individual faculty member's prerogatives to allocate grades is a "serious threat to academic freedom." Traditionalists end up being labeled "hard-liners" with "no compassion for students." Antitraditionalists end up being labeled "corruptors of education," "softies," or worse.

Remedial action usually consists of some committee meekly finding that nothing can be done about improving academic standards because it is impossible to define "standards" in the first place. Often a shouting match begins at a faculty governance meeting, some watered-down resolution is passed, and then serenity finally prevails—again without concrete proposals. In the meantime, many faculty members steer clear of any public discussion of the matter, fearing that certain colleagues will take it personally; and most administrators duck for cover, fearing that "tougher standards" will damage enrollment figures or that specific measures might drive faculty into collective bargaining units.

Yet no one to my knowledge has pointed a finger at the real culprit: the neolithic, heavy-handed grading system which, in my humble opinion, has afflicted education for decades. The A, B, C, D, F alternatives encourage enormously imprecise measurements of performance. In an atmosphere of decreasing enrollments and actual intramural competition for students among departments and faculty, there is bound to be a tendency toward grade inflation. Even in the glory years of swelling enrollments, the letter grade was not much more accurate than the grading of meat—prime, choice, good and commercial, that muckrakers even now tell us is fraught with imprecision and inconsistencies.

The only time letter grades appear to be somewhat accurate and fair is when graduates acquire a cumulative grade point average. Those haphazard A's, B's, C's, D's, and F's come together in some meaningful decimal figure: 2.5 or C+, 2.6 or B-, 3.5 or B+, 3.6 or A- and so on. All colleges, and eventually graduate and professional schools and employers, historically have scrutinized the cumulative G.P.A. of applicants. Unfortunately, however, grades are losing their credibility as meaningful indicators—hence, the rise in popularity of those ubiquitous standardized tests.

Central to the problem is that instructors first submit grades as letters, which are then computed by the registrar as numbers. A much more satisfactory method (one which I'm surprised has not been proposed more often by now) would be for the faculty to submit grades numerically in the first place. At the end of the term, each faculty member could assign any one of the 41 grades, ranging from 0.0 to 4.0 to each student. Thus, there would be no need for numerical translation. When a high-C, low-B student deserves a C+/B- rather than a disparate 2.0 or 3.0, under a new system he could be given what he deserves: 2.5. When a low-A student is graded at the end of the term, he would not be given a grade which denotes absolute perfection, 4.0, but would receive the more accurate 3.6, 3.7, or 3.8.

Such a system would be extremely adaptable to courses such as business, mathematics, or science, where the accumulation of objective test scores can be recalculated easily by the instructors from 0-100 averages to 0.0-4.0 grades at the end of the term. The more "subjective" courses, English or humanities, would lend themselves to ranking of classes and assigning corresponding 40 numerical evaluations on a scale from 4.0 downward, or to calculating letter grades with either plus or minus suffixes in terms of their numerical equivalents (C- or 1.7, C+ or 2.4, etc.). Instructors in any discipline opposing the numerical system would *not* be compelled to do anything but indicate 4.0, 3.0, 2.0, 1.0 or 0.0 rather than A, B, C, D, or F.

The net advantage of this new policy would be sixfold. *First*, grade inflation indirectly would be neutralized. Most faculty members admit privately that when a student is right on the borderline between two grades, and there are no mitigating factors such as poor class attendance, the student usually gets the higher grade. (It is a good hedge against complaints being filed with student appeals committees and one's

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acquiring a sour "grapevine" reputation.) With borderliners getting what they deserve, there not only would be fewer appeals, but, more importantly, a gradual scaling down of inflated cumulative G.P.A.'s.

Second, numerical grading would be an easy policy to implement. There would be no need for divisive rhetoric about "academic standards," no drastic "great leap forward" kind of effort bound to meet resistance. A simple administrative directive stating that faculty have 36 more alternative grades to choose from would stir hardly a ripple of protest. Recalcitrant professors need only select from the five old standbys. Moreover, since most institutions are moving toward computerization, transcripts can be calculated and reported under a dual system of letters and grades. If a transcript is being requested by someone interested only in the letter grade earned, programmers need only have the computer translate the numerical grades, 1.7, 2.6, and 3.8, for example, back into the letter equivalents, C, B, and A.

Third, there would be increased instructional "accountability" and greater accuracy in grading. Needless to say, there is much greater precision when one has 41 choices over and against only five. Plus, there would be a tendency for instructors to be more exact in specifying objectives relative to specific point values on the 41-point scale. After a while, it would be difficult for a faculty member to justify awarding 4.0, for example, to every member of a certain segment of a class when actually within that particular segment there is significant differentiation, ranging from the perfect student (if there is indeed such a creature!) getting a 4.0, down to those borderliners getting the lowest A-.

Fourth, there simply would be greater fairness shown to slower learners. It is very difficult for some students to make enough A's and B's worth 4.0 and 3.0 points to offset previously earned D's and F's worth 1.0 and 0.0. Motivated slow learners could accumulate enough points in that wide space between 2.0 and 3.0 gradually to pull up low averages to the minimum 2.0 required for graduation. Late bloomers, the socially disadvantaged, and so-called "special students" would be able to function better within a more predictable, more reliable grading system.

Fifth, admissions offices at graduate and professional schools and, eventually, employers would have a more accurate indication of performance in individual courses and in a deflated cumulative G.P.A. Thus, they could place more importance on grades earned over the years as opposed to those controversial standardized tests—tests that involve only minutes in the taking and which, some experts argue, are inaccurate and discriminatory. Presently, however, admissions officers and employers complain that as long as grades continue to be misleading, they will have to place more and more emphasis on their *own* indicators of competence.

Sixth, those solid A, B, or C students would not be inclined to coast the last few weeks of the course. Frequently, under the present letter grading system, there is a temptation for safe mid-nineties, eighties, or seventies students to relax—knowing full well that a reduced score on the final exam will pull them down only in the range of low nineties, eighties, or seventies. They will still get the A, B, or C, and so they question putting forth the extra effort. Resting on one's laurels would be penalized under the numerical system because one's average might be reduced from a 3.8, 2.8, or 1.8, to a 3.7, 2.7, or 1.7. With a little extra subject matter mastery, one might even earn a 3.9, 2.9, or 1.9.

Certainly colleges and universities need to reclaim their legitimate function as *credentialing* institutions. As long as they cling to the outmoded letter grading system, they will further encourage the loss of credibility with a public that is already (rightfully or not) in an uproar over declining excellence in education. We educators have established a long tradition of leadership in American life. It is time we took it upon ourselves to make some strides in the important area of evaluation and credentialing of students—at least at the college level.

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LEARNING TO LEARN STRATEGIES: LEARNING WHAT YOU KNOW, LEARNING WHAT YOU DO NOT KNOW, AND LEARNING WHAT TO DO ABOUT IT

The adjunct approach to teaching learning and study strategies and skills involves creating some sort of supplementary instruction that can take any form, from a two-hour workshop on a particular method to a semester-long course teaching a variety of approaches and techniques. At The University of Texas at Austin we have developed an undergraduate learning-to-learn course as part of the Cognitive Learning Strategies Project. Classes meet three times a week for one-hour sessions, and students must take the course for a grade, rather than on a credit/no-credit basis.

A diversity of students enroll in this course. However, the majority are lower-division students with a history of academic problems or students who have encountered problems in their studies at UT. Although the course is a voluntary elective, many of the individuals who enroll have been strongly urged by advisors to take the course. Other students have enrolled in preparation for advanced studies or training.

The overall goal of the course is to help students acquire the knowledge and skills they need to take more responsibility for their own learning. Specific goals for the course are developed with each student after a battery of entry measures are administered. These measures vary somewhat from semester to semester as different aspects of the course or as new curriculum materials are being evaluated, but in general they include the LASSI (Learning and Study Strategies Inventory; Weinstein et al., 1987, H & H Publishing Company, Inc.); a standardized measure of reading comprehension; a measure of self-concept or self-esteem; and supplementary measures examining various aspects of cognition, anxiety, and motivation. The information obtained from these instruments, individual interviews, and group discussions is used in designing the curriculum, individual focus projects, and both group and individual exercises.

It is difficult to individualize teaching learning-to-learn in the context of a structured course with 30 students in each section. For this reason, both group and individual goals are established. General course goals are that, upon finishing the course, students will be able to: (1) increase their knowledge and understanding of learning and study strategies and methods; (2) increase their ability to use effective strategies and methods; (3) monitor and modify, when necessary, their use of strategies and methods; (4) reduce the stress and negative affect often associated with academic tasks; and (5) accept more responsibility for their own learning.

The course content focuses on the strategies and skills from each of the following categories: executive control processes, such as goal setting and comprehension monitoring; knowledge acquisition processes, such as elaboration and organization; active study skills, such as pre-, during, and post-reading methods; and support strategies, such as methods for reducing anxiety and dealing with procrastination.

A variety of instructional methods is used; but the emphasis, given the procedural nature of much of the content, is on guided practice and feedback. When we are teaching declarative knowledge, such as facts, practice is not so critical. When we are teaching how to do something, such as a procedure or problem solving method, then practice is critical, particularly practice where informational feedback is given. To facilitate transfer, the exercises used in class and for the homework or lab sessions are adapted from a wide variety of content areas and task types. Students also use what they are learning in their other courses and report on the results in a journal. The problems of transferring these new strategies and skills also are directly addressed in class discussions throughout the semester.

To facilitate integration, the strategies and methods are discussed in a cyclic manner. First, the instructor gives a brief introduction to the learning strategy, and then she identifies how it can be used to address a student-identified program. This discussion is always related back to the model of the successful student presented at the beginning of the semester. Next, the key elements of the strategy are presented along with a few examples. This is immediately followed by practice and feedback sessions so that students can begin to incorporate the method into their own learning strategies repertoire. As the course progresses, the use of the strategy will be reviewed and its relationship to other strategies identified. The purpose of this practice

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is to help the students form a more systematic approach to studying and learning rather than just providing a bag of tricks. In fact, the last two weeks of the semester are totally devoted to an integrated review, focusing on learning and studying as interactive systems rather than as isolated events.

Individual Assessment and Course Evaluation

Using the LASSI and the other assessment instruments at the beginning of the course helps each student to know where his/her strengths and weaknesses lie. Students can see what they know about learning strategies and skills and what they do not know and need to concentrate on in the course. The general goals of the course focus on the broad area of learning-to-learn phenomena, but the specific student goals are derived from the results obtained with the assessment instruments (as well as student interviews and initial class discussions). Using this information, students select problem areas for more intense attention and work.

For example, the student might concentrate on a particularly weak area in a series of problem papers. These papers represent a type of assignment in which students must identify a personally relevant problem and keep a log, explaining how they are trying to solve the problem and describing the progress they are making (including any difficulties they have along the way). They could also select practice exercises from one of their weaker areas during lab sessions. Instructors conduct individual and small group focus sessions on narrower topic areas than can be addressed in class. Instructors also encourage students to select their particular problem areas as a focus for many of the in-class practice, as well as homework, assignments.

The LASSI is also used as a post-course measure. All students complete the same (or an alternate form) battery of tests at the end of the semester. These data are used in two ways. First, each student's progress, particularly in relation to his/her entry-level performance, is monitored. We are currently working on ways to improve the methods used to get this feedback to students, along with prescriptions about where they need to concentrate their future efforts using resources such as the Learning Skills Center. Presently, students obtain this information on a more informal drop-in basis to gather teacher impressions and to look at test scores. However, using the LASSI we can be far more diagnostic in our assessment and give specific information to students about where they still have deficiencies, how serious these deficiencies seem to be, and what they need to do to enhance their chances for academic success in a postsecondary setting.

The second way we use the assessment information is to evaluate the course. These data allow us to address questions related to planning, implementing, and improving the instructional content and delivery. For example, using the LASSI we now evaluate the topics emphasized in the course to see if they fit with the profiles of the students taking it. We address such questions as: Are we emphasizing topics that are already in the students' repertoires? Do we need to add content in a certain area because many students are particularly weak in that area and still have some problems upon course completion? We also use the LASSI to evaluate our instruction. Are we seeing improvement in the areas we emphasize in the course? Are the changes we see meaningful or do we need to try to improve the outcomes we are getting? In which areas should we be concentrating our efforts at producing supplementary student materials and exercises? Finally, we conduct a global assessment that relates our stated goals for the course to the outcomes we have obtained on the assessment measures and the in-class performance measures, such as in-class discussions, test performance, journals, and assignments.

The LASSI has made a significant impact on the quality of the information we can give to students as part of the advising process. In addition, the ten scales give more detailed information for course planning and evaluation. From both an individual and a departmental perspective, the availability of a diagnostic/prescriptive learning and study strategies and skills instrument has impacted significantly the effectiveness of our learning-to-learn course.

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COST/BENEFIT TESTING

The Problem

The testing of mathematical concepts is a difficult task. Are multiple choice responses reflective of a student's knowledge? Perhaps he/she knew the entire solution except for a mere starting formula or partial hint of a word problem setup. Are time pressure exams reflective of the "non-academic" world, or is accuracy and persistence and the skill of buying information more valid indicators? Perhaps fewer, more extensive problems are the way to go. But answering two problems wrong on a five-problem exam would fail the typical student, given the norm in grading policies. What is the answer to this dilemma? Is there another more effective way to test students' content and process knowledge?

Cost/Benefit Testing

A possible solution lies in the usage of "Cost/Benefit Testing" (CB-Testing). Employing this technique, an instructor selects a few extensive problems that reflect the theory being evaluated. The number of problems chosen should be no more than can be completed by 90% of the class in the time allotted, eliminating the artificial and somewhat unfair time constraint problem that exams usually pose.

Next, a scheme is developed whereby students can "buy information" from the teacher through the use of "penalty points" (pp's). For example, a right or wrong gesture from the instructor may cost 1 pp on a 10-point problem. A forgotten formula may cost 2 pp's; a diagram setup, 4 pp's; a word problem setup with all equations *unsolved*, 5 pp's; and so on. The students may buy information during the middle third of the exam time. Thus, during an hour and a half exam, the instructor would allow pp purchases from the 30th through the 60th minute. This policy prevents last minute rushes and requires the student to make his own cost/benefit decision at the right point in the interactive exam session.

Surprisingly, 50% of a typical class takes advantage of this approach. Students enjoy it as a way to unfreeze on what may be a difficult problem. They begin to rely on their own thinking abilities in order to understand how to deal with risk and the cost associated with it. They feel that the exam more accurately reflects their knowledge and abilities. And the instructor takes pride in seeing a "slow" student solve at least half of a difficult problem. All in all, it is a win/win situation, except for one minor difficulty. If instructors help the students on the exam, does this not skew the distribution unfairly to higher grades?

This would definitely be the case if we constrained ourselves to the conventional grading policy of 90+ = A, 80-90 = B, etc. Even a "normal distribution curve fitting policy" may not deliver a fair and motivational distribution of grades. So a question remains as to what method of grading would be as equitable and motivational as the above testing technique seems to be.

Cluster Grading

The ideal grading technique that is fair and motivational and that fits perfectly in conjunction with CB-Testing is "Cluster Grading." If the exam is difficult enough despite the CB technique, then the distribution of grades should be scattered throughout the 0-100 spectrum in a manner that would reveal "point gaps" between groups. One such actual distribution is as follows:

94 94 92 *** 89 89 88 87 86 *** 84 *** 82 81 80 80 79 *** 77 77 *** 75 74 73 73 73 72 71 70 70 69 *** 66 65 *** 63 62 *** 60 59 59 *** 54 54 *** 52 51 *** 47 46

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Notice that 12 groupings or clusters appear. It is merely a matter of assigning grades to these clusters (A+, A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F). The decision as to combining groups and the exact letter grade to be assigned is up to the motivational policy of the individual instructor. Two possible outcomes given the above data are as follows:

94 94 92 = A	94 94 92 = A
89 89 88 87 86 = B+	89 89 88 87 86 = A-
84 = B	84 = B+
82 81 80 80 79 = B-	82 81 80 80 79 = B
77 77 = C+	77 77 = B-
75-69 = C	75-69 = C (decided to skip C+)
66 65 = C-	66-59 = C- (Nice guy, isn't he?)
63 62 = D+	54 54 = D+
60 59 59 = D	52 51 = D
54 and below = F	47 46 = D-

Each of these grading policy sets will produce a different motivational outcome, but the clustering technique is the same. Experience indicates that the students enjoy this type of grading since they feel that they are being evaluated with respect to their peers in a fair and competitive manner. Thus, the conditions on the exam day, the instructor's ability to communicate, and the prior experience of the class are normalized in an equitable manner.

Summary

In conclusion, Cost/Benefit testing, in combination with cluster grading, can validly represent the content and process knowledge of the students in your classroom. The technique is valid, efficient, fair and comprehensive. It requires fewer problems per exam and therefore minimizes the grading effort of the instructor. It utilizes testing time in a constructive manner and affords the greatest opportunity for a student to demonstrate his skills relative to his peers. An exam designed in this manner will produce a feeling of fairness. By using these techniques, an instructor will maximize the student's motivation to learn and test the required mathematics.

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THE SECRET OF TEACHING ENGLISH COMPOSITION

Although I have taught English composition and remedial writing courses for more than fifteen years, the task still remains challenging. During that period, I have regularly redefined my relationship with students in an attempt to pay allegiance to two apparently contradictory demands: (1) the requirement to maintain high academic standards to insure that students learn to write competently and (2) the human need to maintain positive person-to-person bonds with students to keep them involved with the class. The task is not easy, nor have I always been successful in performing it; but I think I am finally getting the hang of it. I am sharing this experience because I think it is an important issue for college professors who have a profound love for their academic discipline and the teaching profession, as well as a persistent concern about their performance in the classroom.

I have learned and continue to learn that to be an effective writing teacher I must consciously integrate three roles that are always in tension: evaluator, teacher, and friend.

The emphasis at my community college is on specifying learning outcomes, writing clearly understood course goals and objectives, and thoroughly evaluating student performance. The feeling is that students need to know what the English staff expects of them; the assumption is that once students know what is expected of them, their maturity and motivation will drive them to do the necessary classroom work. If students lack motivation, and fail, the responsibility rests completely on their shoulders.

I remember one English staff meeting where we compared and contrasted our evaluation guides. The critical issue was whether professors should specify paragraph length in the body of the essay or be vague. I wanted to be very, very specific about the length of development in the body of the essay because when I corrected papers I did look, in fact, for certain characteristics before assigning a grade. I felt comfortable with my evaluation guide because it seemed so logical and orderly. Well-organized students also appreciated and used the evaluation guide intelligently.

Unfortunately, some of my students found the evaluation guide intimidating and were a bit overwhelmed by the sight of their returned essays and the attached evaluation sheet. My student evaluations hinted that I was being perceived as the archetypal (and hated) English teacher who cared more about comma splices and run-on sentences than students' feelings. That made me feel uncomfortable. Although I knew as a result of the basic skills tests (required of all New Jersey students) that the students coming into my English 101 had poor reading skills, abysmal writing skills, inconsistent study habits, and very unclear plans for their futures, I did not take these academic and psychological realities fully into account. Intellectual knowledge had not become emotional awareness.

While the majority of students complimented me (when completing their anonymous student evaluations) about my organization, teaching style, etc., there were persistent complaints from some students—especially when the questions on the student evaluation forms were whether "I would enjoy taking another course from this teacher," or "A partnership in learning existed in this class."

At first, I reacted defensively about these student comments. I did research on the validity of student evaluations and discovered that they are not valid because of their sensitivity to lenient grading practices and a host of other factors, wrote a long-winded memo to the vice president of the college about the injustice of being denied promotion on the basis of less-than-excellent student evaluations, and then focused on why student perceptions of me were the way they were. I accepted the fact that teaching is like politics: *perception is reality*.

What helped me in this undertaking was understanding the marvelous humanity of the teaching-learning process by listening carefully to my children's day-to-day reactions to their own teachers in elementary and middle school. The teachers that my kids related to best were the ones whose humanity was on display. My twelve-year-old daughter felt comfortable with her language arts teacher because they talked about clothing fashions in class, and my ten-year-old son liked math because his teacher doubled as an intramurals coach. I asked myself, "Are my students so much different than my own children?" and concluded that on

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an emotional level they were not. My students needed to feel a bond with me; and I needed to feel a little more their emotional confusion, anxieties about the present and the future, and fear of English composition.

Gradually, I began to make minor changes in my classroom management that had a profound effect on the emotional climate of my class. I distributed a survey, asking students to tell me about their experiences in high school English classes, their work schedules, and their expectations about the course. What an eye-opener! Suddenly, I realized what impossible lives many students lead—dealing with car payments, difficult jobs, heavy academic schedules and the struggle to mature.

I also spoke more honestly about my own life through my free writing, talked with more candor about my writing problems, and listened with more empathy to their excuses and difficulties. One day I wrote a composition about the pain of divorce, read it out loud nervously, and listened while four students responded by talking about their experiences of divorce in their families.

By thinking of my classroom as a dinner table, I became more aware of the ratio of teacher-talking to student-talking and began to be quieter at the head of the table. By patiently listening, by developing the art of asking questions, by requiring students to read their writing out loud, I led the students to more participation and more creativity in the classroom.

I made their adjustment to my course easier by requiring an essay at the beginning that was evaluated but did not count in the final grade. I also tried to be more sensitive to the feelings of individual students by giving back poorly written essays in the privacy of my office where a critical remark would not be embarrassing.

To make sure I was aware of the emotional dynamics in the classroom, I scheduled an anonymous student evaluation at mid-term.

Instead of just teaching students to write, I started thinking of my responsibility to befriend them thereby creating a bond that transcends the classroom.

My sense of what I represented in their lives also changed. I felt more paternal and less like an impersonal evaluator. I began to place on myself the same expectations that I placed on my kids' teachers: to be both demanding and nurturing.

I experienced a growth of trust with students who felt comfortable sharing their lives with me.

I also felt more successful as a writing teacher; as I cared more about the individual student, he/she seemed to care more about pleasing me by working harder on essays. Students accepted my suggestions, worked more diligently on drafts, and talked more intelligently about their essays.

There still were many students who failed my course; but there was less bitterness, blame, and hostility. I was pleasantly surprised that some students who had failed took my course again deliberately because they did not feel I had treated them unfairly.

Have I the secret to being the best teacher possible? I have no idea. I do know that for me teaching now involves less of the head and more of the heart.

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"RESEARCH" IN FRESHMAN CHEMISTRY

The teaching of general chemistry presents two major challenges to the instructor. *First*, the teacher must present in a coherent fashion a broad overview of the laws, theories and relationships which make up the body of knowledge called chemistry. This is a formidable task considering the variety and quantity of information within the discipline, not to mention its interrelationships with allied fields. *Second*, the teacher must assist the student in turning this massive amount of information into a working, functional body of knowledge which he/she can apply in a practical sense. The second is the more difficult task, in part because the teacher cannot control the marvelous, mysterious process of intellectual synthesis taking place within the students' minds. This the students must do for themselves. However, the teacher can create an environment in which the student must make this intellectual synthesis.

In an attempt to create such an environment, we have introduced an individualized "research" problem as the final series of experiments in our general chemistry laboratory program. This series of experiments is performed by all general chemistry students and is not part of an advanced or honors program.

The directions given the student for the last five weeks of the term are: "Starting with three grams of either copper, zinc or magnesium, prepare a series of five compounds (A → B → C → D → E) and prove their identity to the satisfaction of the instructor." While such a task is simple, even trivial, to an experienced chemist, to a freshman general chemistry student it represents a formidable challenge in chemical research.

The students are required to submit a detailed research proposal for the synthesis and identification of their chosen sequence of compounds. This proposal is reviewed for safety considerations by the instructor, but the students are not told whether the proposal is workable. The writing of the research proposal requires considerable library research and serves to introduce the student to the chemical literature. Also, the students quickly learn the importance of good experimental design and develop a basic understanding of synthetic sequencing and analytical processes.

Once the research proposal is reviewed for safety, the students begin the synthetic work. It has been our experience that this experimental series is best suited for small laboratory sections of a dozen students or less since each of the students possibly will be doing a different series of experiments which can involve corrosive and flammable materials. Close supervision by the instructor is critical for this series to be performed with minimal risk to the students (and instructor). The students are required to keep detailed notes of their experiments and progress. After the final compound is prepared and analyzed, the students report their results in journal format. This journal report gives the student further experience with technical writing.

Feedback from students has been very positive. Some students find it frustrating in that they don't know where to begin. It is this very frustration which can help stimulate the intellectual synthesis of random data into a working body of knowledge. The guiding, sometimes gentle, hand of the teacher is a must, however, to prevent this frustration from turning into despair and defeat. Students normally find this experiment stimulating, challenging; and they feel a great sense of accomplishment for having carried out their own experimental procedures.

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The High School-to-College Transition

Community college instructors, developmental specialists and educational psychologists are becoming increasingly interested in the nature of the transition between high school and college. Most students enter postsecondary educational settings shortly after they complete their high school studies. Some come to college years after they have graduated from high school. The educational reference points for both of these groups are often still grounded in their secondary school experiences. This experiential reference point can create problems for students because of the differences between the environments and demands of high school and college learning settings. If we are committed to helping students succeed academically, then it is part of our responsibility as educators to help students successfully make the transition from high school (or high school-based expectations) to college.

Using questionnaires and an interview schedule, a study of the differences between secondary and postsecondary educational climates and requirements was conducted as part of the Cognitive Learning Strategies Project located at The University of Texas at Austin. Data were obtained from instructors, students, student affairs specialists, and learning assistance specialists. The results of this study have been pooled with other research findings to identify six categories of differences: (1) Academic Environment; (2) Grading; (3) Knowledge Acquisition; (4) Support; (5) Stress; and (6) Responsibility.

The following is an edited list highlighting some of the major differences between high schools and colleges.

1. The **Academic Environment** category includes differences in operational, or logistical, variables.
   - Instruction is mainly by lecture.
   - Reading assignments complement but do not necessarily duplicate lectures.
   - There are usually more students on campus.
   - There are more social distractions.
   - Classes meet less frequently and for fewer hours per week.
   - There is less "busywork."
   - The tasks often are less structured and less concrete.
   - Instructors usually are not trained to teach.
   - Using the library effectively is more important.
   - Students are held responsible for what they were supposed to have learned in high school and other courses.
   - Class discussions often are aimed at raising questions with no clear right or wrong answer.
   - There is much more emphasis on understanding theory.

2. The **Grading** category includes differences about how grades are earned.
   - Harder work is required for earning a grade of A or B.
   - The simple completion of an assignment often earns a grade of C or lower.
   - Many semester grades are based on just two or three test scores.
   - Student progress usually is not monitored closely by instructors.
   - Exam questions often are more difficult to predict.
   - There are more major writing assignments.
   - Essay exams are more common.

3. The **Knowledge Acquisition** category includes differences about how students study and acquire new knowledge and expertise.
   - Instructors rarely suggest ways students can learn the material.
   - Effective reading comprehension skills are more important.
   - Taking good notes is more important.
   - Few visual and study aids are provided.
   - Identifying the main ideas is more important.
   - Effective communication skills are more important.
   - Students must independently seek additional and supplementary sources of information.
   - Students usually must recognize the need for

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CREATING MANAGEABLE LEARNING STEPS

The idea for breaking unit assignments into small individual learning steps for my composition students occurred to me when I was in graduate school. It had been some years since I had completed my master's degree, and I felt a little rusty and somewhat nervous over becoming a student once again.

The first course turned out to be the worst. It was a course in linguistics. The professor had mastered his topic thoroughly and was completely in love with the subject matter. Unfortunately for me, he was not in the least concerned with chaps like myself who were ignorant of the algebra-like formulas he so generously scrawled out on the blackboard, leaping from one to the other with what seemed to be the speed of light! Soon I felt totally confused and hopelessly lost. Then one day somewhere near the middle of the course our mentor backtracked and began to talk about linguistic development in children. He explained the process of language development as a series of small steps and discussed the ramifications of each step. I was overjoyed! The course content began to fall into place; the ideas which heretofore had been mere fragmentations now began to draw together and fit like the pieces of a puzzle. The frustration, fear, and confusion I had experienced earlier were gone, and I was learning!

As I lived through the earlier, more painful, experiences of the linguistics course, I began to identify with my own students. How many times had I heard them say, "I just don't know where to begin!" or "I can't seem to get started!" Now I knew exactly how frustrating and painful that experience felt and that I could not continue to throw new learning experiences at students without providing them with concrete starting points.

I realized that I needed to reduce the unit assignments to basic steps and shift the activities of the course from instructor action to student activity. With this in mind, I took each writing unit and divided it into a series of clearly defined action steps in which the students did the doing and I did the watching and listening. Each assignment or writing unit lasted for a minimum of three sessions. The first session introduced the assignment: the process and the individual steps of the process were laid out, as were suggested writing topics. The students were to begin thinking about a topic, determine the steps they might follow in developing that topic, and bring them to the second classroom session.

During the second session the students practiced the steps, and I introduced activities that were designed to help them practice. It allowed me to use peer teaching, small group discussion, paired-off activities, along with students working at the blackboard. It allowed students to share their ideas with one another and allowed me to circulate around the room, commenting and helping individual cases. As the students worked, they recorded their activities in their writing notebooks for incorporation into their themes later on. In the case of more difficult assignments, students scheduled conferences with the instructor to go over their notebook work before writing the final paper.

During the final classroom session, the students wrote their papers, using the steps practiced in class and outlined in the notebooks. Both the content and grammatical accuracy of the final papers improved. The students no longer found themselves rambling or trapped in vague, half-thought-out ideas. Nor did they find the need to be deliberately ambiguous in order to cover up the fact they had no idea what they were doing or writing about.

It seems to me the number one "sin" we as educators are apt to commit is to forget that school learning, like walking or talking, is a fairly complex process consisting of individual steps which must be learned and practiced. We sometimes forget what it feels like to encounter our disciplines for the very first time. Having had that painful, if not nightmarish, experience myself, I have decided to make every effort to provide my students with *clear learning steps* and *time for practice*. In the end, it becomes a matter of the instructor being willing to make the imaginative leap from the idea to its process *with* the students instead of forcing them to travel that road alone.

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Suanne D. Roueche, Editor
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HISTORICAL ILLITERACY IN THE COMMUNITY COLLEGE

Recently there has been a developing concern regarding the historical ignorance and awareness of college students. Broadly and simply defined, historical illiteracy is the lack of familiarity with the past. As teachers, we should address the importance and implications of historical illiteracy, try to ascertain a "profile of students," and develop working exercises to enhance the students' ability to recognize not only historical facts, but their relevance in today's world.

Except for English literature, history is considered to be the most literary of the academic disciplines. E.D. Hirsch, in his recent work *Cultural Literacy*, has stressed that because of the lack of historical familiarity among students, there is the widespread inability to understand or identify basic references and metaphors. The study of history is not just the mundane recitation of facts; it is the enlightenment of students regarding ideologies, socioeconomic and political structures, and a fundamental grasp of not only American history but of Western and non-Western development, as well. Many of us have had European and Asian pupils in our classrooms who seemed to possess a greater knowledge of American historical development and government than our own students. A former President and avid student of history, Harry S. Truman once insisted: "The only thing new in this world is the history you don't know." Perhaps that is just a quaint overstatement by a lover of the discipline. But there is little doubt about the growing awareness and concern over the emergence of historical amnesia among American students. Before we suggest some exercises to address the problem, let us propose a tentative profile of "historically illiterate students."

Studying Historical Illiteracy in Students

Our study of over 300 college students was designed to identify factors that differentiate those who do not know much of their heritage from those who do. Students whom we labeled as culturally illiterate scored lower than the 54th percentile on a fairly easy matching quiz that tested American, world, and intellectual history.

The study gave us many interesting and surprising results. Students often could not answer even simple historical questions. For example, we found that many students did not know U.S. Grant from Robert E. Lee or Jefferson Davis. Many confused Benjamin Franklin with Thomas Edison, and a great number of students did not recognize important world leaders of the past such as Gandhi, Churchill, Mao, or Caesar. Another concern is that students seemed unfamiliar with major western intellectuals: they confused Karl Marx with Adam Smith, or Einstein with Newton. A greater alarm was raised when respondents obviously did not know an answer and would give a name that was totally unrelated: for instance, Sam Donaldson, the correspondent, was often mistaken for Senator Joseph McCarthy.

In addition, we found "illiterate" students to have special qualities in common that set them apart from those in the "high score" group. Our results show that the groups differed significantly on attitudes; students in the low group were more than twice as likely to be alienated and have a lower self-esteem than students who scored well on our quiz. Furthermore, this group reported to be more socially isolated, as well. This may indicate that persons who do not have many social outlets have difficulty structuring time in an historical sense and have few social and psychological opportunities to develop an interest in history. Finally, students who hold a narrow, closed-minded view of nationalism were three times more likely to score low on the quiz.

In addition, we identified other background factors associated with historical illiteracy. Persons 22 years of age and younger were three times more likely to score low than persons 30 and over. Male respondents were 2.5 times more likely to record a high score than female. Interestingly, we found that parents' educational background had no effect on their children's knowledge of history.

A last and important finding is that students who have completed at least one history class in college were 2.3 times more likely to be aware of significant historical events. This finding underscores the importance of education, of a familiarity with the world in which we live.

Suggested Activities

Now that we recognize some of the probable causes of historical illiteracy, we can design activities for students to help them develop at least some understanding of their history and culture. Students can be given various writing assignments that will enable them to move from simple forms of abstraction to more complex forms while increasing their levels of cognition as well as their awareness of how historical perspectives evolve. These assignments can be used to improve historical literacy in college classes.

1. Students can focus on a recent historical event (the policies of FDR, the McCarthy hearings, Bay of Pigs invasion) by interviewing people to obtain their views and perceptions of the topic, by researching how the event was originally presented by the mass media, and by researching how the event is now viewed from an historical perspective. This type of assignment will lead students to discover information in the social sciences that enables them to become cognizant of historical parameters.
2. Students can focus on the use of symbols in history. This assignment will enable students to discover the significance of semiotics in history and will result in students' developing an understanding of semantics. Students should begin with a pre-writing workshop in which they discuss symbols and recognize how important symbols are in historical movements and events. Then they can write an essay on the history and meanings of a particularly fascinating symbol. This symbol can be from any historical period or event and may include religious symbols (lotus flowers and swans in Hindu; Star of David), national flags and standards (the significance of the French tricolor), political symbols (hammer and sickle; swastika), or musical symbols (Dixie; La Marseillaise). They need to explain the following in their essays: what a symbol is, the symbol they have chosen to discuss, what this symbol means, the historical significance of the symbol, the social importance of the symbol, and why this symbol is fascinating to them.
3. Students can analyze a particular aspect of the local newspaper. This assignment utilizes several approaches to the development of historical awareness. Students must read, analyze, synthesize, and interpret information that, although current, illustrates various levels of the historical, ethnological, and literary origins evident in a particular event. Students might consider focusing on one of the following: political cartoons—their history from Thomas Nast to the present; the origin of the editorial, and historical editorials on past events, such as World War I or Viet Nam.

We also recommend these "short" ideas that instructors may incorporate into existing assignments. (1) Students can develop the historical background of all topics used in essay assignments. In a literature class, for example, students should be aware of the historical contexts in which famous authors were writing; in a sociology class, students should research the history of modern social problems, such as domestic violence or poverty; and in political science, students should research the history of civil rights. (2) Students can explore histories of foreign lands, especially those in the news, in order to understand how history has a bearing upon today's events. (3) Students can establish historical relationships and continuity through their responses on essay exams.

The purpose of these suggested exercises and strategies is to provide students with an increased perception of time and the interrelationship of events. Their diversity suggests that the instructional attack on historical illiteracy need not be limited to the history classroom.

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ASSESSMENT AND ADVISEMENT: AN EFFECTIVENESS STUDY

The Colorado Assessment and Basic Skills Committee, a group of developmental educators representing Colorado community colleges, has completed a two-year study on the effectiveness of basic skills assessment and advising for new students at their schools. The study concentrated on:

1. the relationship between a group of demographic variables and student success and persistence;
2. the relationship between each of these variables separately and success and persistence; and
3. the relationship between each of the variables and following or not following assessment-related advice.

The study was conducted to investigate in some depth the possible factors contributing to the success (attainment of a 2.0 GPA in the first semester) and persistence (enrollment in the following term) of new community college students, as well as those factors associated with following or not following assessment-related advice. A random sample of 1300 students, half of whom had followed advice and half who had not, was selected for study. The main statistical devices used to analyze data were stepwise procedures and discriminant function analyses. These procedures are most useful in predicting group membership (is a certain subgroup of students likely to follow advice?) and in associating variables with outcomes. In addition to following or not following advice, the study included as variables:

1. marital status
2. ethnicity
3. age
4. sex
5. employment status
6. credit hour load
7. whether the student declared a major
8. whether English is the student's native language
9. the existence of a handicapping condition
10. number of dependents
11. level of financial aid
12. previous school experience.

The Results

Results of the study indicate that a number of factors relate to the success and persistence of new community college students. The most significant factor is whether the student follows assessment-related advice and enrolls in courses deemed most appropriate in the counseling process.

The study also produced the following major findings, each of which is statistically significant at the .05 level or better.

1. More than 80% of the new students who follow assessment-related advice succeed academically and are more likely to persist at least one additional term than those who do not follow such advice.
2. Students who follow advice for English courses are almost four times as likely to succeed than those who disregard such advice.
3. In reading and mathematics, new students are more than twice as likely to succeed if they follow assessment-related advice.
4. Students who score below the college level on assessment tests are much more likely to follow advice than those who score at the college level.
5. Overall, women are more likely to follow advice, to achieve higher GPA's and to persist longer than men.
6. There is no statistical relationship between ethnicity, on the one hand, and following advice, academic success or failure, or persistence, on the other.

7. Women with more than one dependent, who work outside of school and who carry more than six credit hours are more likely to succeed than any other subgroup in the study.
8. Men taking fewer than six credit hours, who are single and who have not followed advice are more likely to fail and drop out than any other subgroup in the study.
9. Except for women students in #2, above, credit hour load has no relation to academic success or persistence.

The Predictions

In general, predictions can be made about whether new students will tend to follow assessment-related advice or not. Those likely to follow advice are:

1. the academically underprepared
2. those with more than $500 in financial aid
3. those with more than two dependents, carrying more than six credit hours
4. married, working women with two or more children
5. students over age 25
6. the handicapped.

Those prospective students likely *not* to follow advice are:

1. those taking one course for personal enrichment or for career upgrade
2. males in their late teens or early twenties
3. those with less than $500 in financial aid
4. non-native English speakers, especially international students
5. those with 13+ years of schooling
6. those with no dependents
7. single or divorced males and females under 24.

There is also some clear indication that further, in-depth evaluation of the data likely would result in the following findings:

1. Failure to follow advice can be associated with freshmen dropouts from four-year colleges (probably males).
2. Lack of persistence, but not failure, can be related to child care needs, especially in the subgroup of married women over 25.
3. Low persistence among women (especially Hispanics) is related to lack of family support.

Dissemination and Continuing Research

The committee has been encouraged by the community college governing board to disseminate results of the study and to continue research on affective variables, such as motivation and self-esteem. Continued study will also focus on the needs of minority and women students and the programmatic needs of counseling offices at individual colleges. An executive summary of the report has been distributed to presidents, deans of instruction and student services, and to counselors and teaching faculty. A prepared presentation will be given by committee members at their colleges, adding texture and depth to the executive summary. Finally, each Colorado community college catalog will contain a specific statement alerting students to the proven benefits for following assessment-related advice and urging them to seek counseling assistance.

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DISCUSSING WITH STUDENTS THE CHARACTERISTICS OF SUCCESSFUL STUDENTING

Many new students do not know what a good college student is or what a good college student does. They understand good and bad grades in a general way, and they sense that they should attend classes; but that is where their knowledge begins and ends.

Most teachers know what a good student is—and is not. For one thing, a good student is not necessarily the most intelligent individual in a class.

Guided by this optimistic precept, I discuss the following list of characteristics of good students at the beginning of the semester. I supply my inexperienced students with a description of what a hard-working student does; I tell them what teachers like to see. By learning about these characteristics, students may better understand the day-to-day and class-to-class behavior of successful students. The idea is to provide inexperienced students with guidelines they can follow which will help them get down to the business of serious, successful studenting.

What Are the Characteristics of Successful Students?

1. Not surprisingly, they attend classes—regularly. Moreover, they are on time. If they miss a session, they feel obligated to let the instructor know why, and their excuses seem legitimate and reasonable. They make sure they get all assignments they missed and understand specifically what was covered in class.
2. They take advantage of extra credit opportunities if they are offered: They demonstrate that they care about their grades and are willing to work to improve them. They often do the optional (and frequently challenging) assignments that many students pass up, such as giving a five-minute presentation that substitutes for an essay.
3. Successful students speak in class, even if their attempts are a bit clumsy and difficult. They ask the questions that the instructor knows many in the class are bound to have, provided they are listening.
4. They see the instructor before or after class about grades, comments made on their papers, and upcoming tests. Sometimes they just want to ask a question or make a comment relative to the class discussion.
5. Successful students turn in assignments that look neat and sharp. They take the time to produce a final product that looks good, a reflection of a caring attitude and pride in their work.
6. They are attentive in class. They don't chat, read, or stare out windows. In other words, they are polite and graceful, even if they get a little bored.
7. Almost all work and assignments are turned in, even if every one of them is not brilliant. Successful students seem driven to complete all work.
8. The most successful students may well end up at the instructor's office door at least once during the semester: They'll go out of their way to find the instructor and engage him/her in meaningful conversation.

By discussing these characteristics and others with inexperienced students, instructors can point them toward success. It makes sense to provide new students with models and guidelines for the demanding task of doing well in school.

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OF STUDENT BONDAGE: A POKE AT PROFESSIONAL DISTANCE

I'm still naive. I like new semesters. They have the same clean, promising appeal as new years. New semesters are better, though, in their greater abundance. They give our syllabi and our professional selves multiple opportunities for rebirth. Frequent and regular renascence must be part of the benefits package that goes with college teaching. College instructors get more "fresh starts" than the unfortunates in other fields. They can make, therefore—and break, therefore—more resolutions. I've started many a semester with a lust for PPD—a lust for lack of intimacy with students—and usually a new strategy for achieving "nonintimacy." For the sake of PPD, I won't (I promise myself) let down my guard, smile broadly, smile warmly, listen to sob stories, listen to jokes, or look at family snapshots before or after class. I'll teach this course (for once) like General Patton. And we'll cover *all* the material. And we'll cover it *on time*. And we'll win the war.

There is always a problem with a new PPD strategy: namely, that I hate it. I hate the plans for distance because, in truth, I hate the distance once I have achieved it. Fifteen minutes into the second class period the PPD plan usually begins to fall apart. I recall that I'm not remarkably similar to General Patton. I notice that my students do not resemble brave soldiers. Some of them look peculiarly nervous. But *they* have little reason to fear. After all, *they* come to class well armed against PPD, with engaging personalities, with energy and earnestness, and in some cases with the most formidable anti-PPD weapon yet developed—a spontaneous sense of humor. At the slightest indication of an instructor's interest in them, they fire off all their artillery, battering down the barriers.

And what happens? Bonding begins. It isn't quite so tender as what occurs between parent and child in the moments following labor and delivery. But it has its own transient wonder. It isn't superglue, either. Still, it's strong enough to cement an alliance for a semester. For me the process starts with the first focused attempts to memorize names of students while they're writing. Thus, this two-second scenario: A student looks up, catches me staring, mouthing her name. She grins at discovering me and looks down at her work again. Suddenly, we have settled in for a semester together. We like our distinct identities, so we've started by getting our labels right.

The bond intensifies when we all work together on writing in progress. Another student brings me his problem paper. I read it carefully—even though he's impatient for a quick fix—and pause to think. He waits while I read. He watches me think. He's expecting a verdict—a colossal and irrevokable Thumb up or down. But I keep my thumbs on his paper. Together we start to look at what's there in the still unjudged writing. He tells me what he *wants* it to say. I tell him what it *does* say. Then we study wording. He tells me which words don't suit him. From the abridged thesaurus buried within, I present some other possibilities. He points out the parts of the writing that he likes best. I point out the parts I like best. We scrutinize punctuation. I show him where he has correctly used what he has learned in class and where he has apparently forgotten my excellent instruction. For a few minutes we have teamed to produce a masterpiece, albeit minor. The student appreciates the experience, regards it almost as a miracle. He can see definite improvement in his writing. I can sense a definite leap in his motivation. The mere acceptance of him and his writing and the moments spent with both will make everything I say all semester authentic to him. I'm not just a figurehead any more. I'm a friendly expert, a tappable resource. And he'll stay on tap. Bonded.

So PPD vaporizes . . . . It probably condenses again somewhere else, in an idyllic classroom down the hall. It undoubtedly works wonderfully there. But my resolution this semester will be to refrain from yearning for it.

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Academic Crossover

The college teacher typically knows what resources to search to keep up with advances in his or her own field but often does not know the best resources to examine to keep abreast of what is happening in bordering disciplines. We expect our students not only to be conversant with the major theories and research findings in our own field, but also to coordinate this information with what they learn in courses in other fields. Yet we may not always be able to provide proper learning support for this demand. The same terms may be used in several fields but with very different meanings. So how do instructors find out about current concepts and trends in adjacent disciplines and help students cope with what sometimes seems like conflicting information?

Informal conversations with colleagues in related disciplines are typically stimulating and instructive but prone to interruptions. In addition, their spontaneous nature creates the likelihood that many important points or suggested readings will be forgotten. The Academic Crossover Seminar was designed to resolve some of these problems.

Preparations

First, a general topic and set of participants from related academic disciplines were selected. We chose the title "Cognitive Development: Basic Perspectives and Intervention Strategies" to summarize the interests and expertise of the participants. We decided that (1) three participants would be an excellent number, preventing the formation of subgroups and assuring relatively equal participation from all members; (2) the meeting should be one day in length; and (3) a site away from campus would reduce interruptions.

One participant volunteered to act as information coordinator before and during the seminar. In preparation for the workshop, each participant was asked to write a philosophy statement, essentially presenting his/her approach to the seminar topic. These statements, circulated prior to or at the start of the meeting, ultimately served as a starting point for our discussion. Also, each prepared a brief bibliography or annotated bibliography of worthwhile works—a "suggested reading list" for post-seminar discussion.

The Seminar

Four hours was a reasonable amount of time for discussion of the seminar topic. The first hours of the seminar were spent defining concepts included in our philosophy statements. We often found the different disciplines in agreement on principles but in disagreement regarding the meaning of certain terms. On the rare occasions when our attention started to drift off topic or discussion bogged down, a review of the minutes brought us back on-line.

A summary of the seminar was prepared and included the philosophy statements and bibliographies provided by each group member. (Early on, everyone was free to review the summary, correcting any misinterpretations of seminar discussions.) Each participant was provided a copy of the complete proceedings, making review of seminar discussions and coordination with new information more easily negotiated.

Summary

The original seminar stimulated numerous follow-up conversations, clarified our thinking with respect to the views of related disciplines, and gave us a broader perspective on the issues. Ultimately, we came to a better understanding of our seminar topic. In addition, we learned about research in other fields and developed several new research ideas to be carried out later. Coming as it did, a few weeks before the beginning of fall term, our Academic Crossover Seminar also served to raise enthusiasm for the prospect of the coming school year and the opportunity to apply what we had learned to our own classes.

Kathleen K. Biersdorff, *Psychology, Red Deer College*

Linda J. Butler Dunn, *Special Education, University of Calgary and Horizon School for the Mentally Handicapped*

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THE NATIONAL INSTITUTE FOR STAFF AND ORGANIZATIONAL DEVELOPMENT (NISOD)
Community College Leadership Program, The University of Texas at Austin
EDB 348, Austin, Texas 78712

Taking Roll: An Instructional Innovation

Would you appreciate an instructional method that both encourages students to attend class regularly and to respond to questions? We looked for one and found it—taking roll.

Taking roll regularly is one way to encourage students to attend class. It demonstrates that we value attendance, that attendance records are kept and absences are noted.

As well, most people like to hear their names spoken. It takes only three to five minutes to call the roll aloud, and calling each student's name by taking roll helps us become familiar with them—no small trick when you have classes of 100 or more.

The Added Objective

In addition to encouraging attendance, we want to encourage full class participation. Students are often reluctant to respond to questioning in class. Research findings document that a student who doesn't respond to a question during the first three weeks of class probably won't respond to a question for the rest of the semester. Therefore, we want students responding early on, and so we combine taking roll with breaking the ice.

The Strategy

Once we've established the seriousness of the course (the first and second day of class) by reviewing the syllabus, pre-testing, etc., we tell students that they are to answer the roll, which will be taken daily, by responding to a general question posed at the beginning of class. Initially, the questions are "safe" and relatively nonthreatening:

- "What's your major and where are you from?"
- "What's your favorite food?"
- "If you could change places with anyone, who would it be?"

Any response is acceptable, and minimum positive comments are made by the instructor. It takes approximately seven to ten minutes to call roll in this fashion.

As the semester progresses, so does the self-divulging nature of the questions:

- "What's your favorite television program?"
- "If you had to give a book as a gift, what book would you choose?"
- "What's your greatest fear?"
- "What is one thing you wish your parents or roommate would do?"
- "What would constitute a 'perfect' date for you?"
- "When is the last time you cried in front of another person?"
- "If you could ask anyone three questions and receive an honest answer, who would you ask and what would you ask?"
- "If you could ask your best friend three questions about yourself and receive an honest answer, what three questions would you ask?"

Besides encouraging students and creating a sharing, accepting environment, the questions can direct the students' thinking. For example:

- Lead in to the lecture on population: "If you could change any area of American society, what would it be?" "Do you agree with Thomas Malthus?"
- Lead in to a review of punctuation: "If you could gain one punctuation skill, what would it be?"
- Lead in to a chemistry lecture: "What chemical reaction that occurs in your daily life do you value most?"

After a few classes, the students begin to anticipate the questions. They also have suggestions for questions, often with more depth than the instructor anticipated. (An excellent source is Gregory Stock's The Book of Questions.)

Instructional Payoffs

Having students respond to a question as part of taking roll helps break the instructor-student silence barrier. Students now respond to content questions more comfortably, more eagerly and more often. We think some students come to class just to hear the day's question and their classmates' responses. In any case, they come to class more often, on time and respond in class more often. Taking roll has become an activity to which we all look forward.

Robert N. Boll, *Division Chairperson, Humanities*

Betty Parkman, *Instructor, Psychology, Sociology and English*

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Suanne D. Roueche, Editor

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The Role of the Department Chair

Recently, Bakersfield College examined the role of the Department Chair as seen by the Faculty, Administration and Department Chairs. The result of this study revealed that the department chairs found themselves in a difficult position by attempting to serve two masters, the faculty and the administration.

A survey revealed the faculty expected two things from their department chairs: a good schedule and communication of their needs to the administration. The administration expected the department chair to provide educational leadership, evaluate peers, motivate the unmotivated and increase productivity.

What follows is a speech given by Walt Johnson, Department Chair of Health and Physical Education, to his faculty in which he clearly identifies his "role." Mr. Johnson has been an educator at the community college level for more than 25 years.

THE STATE OF THIS DEPARTMENT

This message could be called "The State of the P.E. Department." I want to talk with you about some concerns I have for us as a department. As department chair, I get an opportunity to deal with each department member in a personal way. You learn what makes everyone tick. I have learned a lot about your likes and dislikes, as far as your teaching is concerned.

The department chair is an interesting position. You are elected by your peers in what may be more of a popularity contest than an election based upon any ability you have to do the job. One of the toughest things for me was realizing I'm the boss. I have tried, for the last three years, to deal honestly and fairly with each of you, although you may not share that feeling. The department may not have moved forward as much as you would have liked, but we have tried to facilitate your teaching.

I consider myself a friend of each of you, but our friendship cannot cause me to lose sight of the concerns I have, and what I am going to share with you. In fact, what I have to say has absolutely nothing to do with our friendships.

You have just been notified that this spring you will have the opportunity to elect a department chair for the next three years. I would encourage each of you to consider running for the position. It is a challenging experience. I will tell you now that I will be a candidate for one more three-year term, although this is not a campaign speech. In fact, after some of the things I plan to tell you today, I may seal my fate with you.

Let's look at what is going on around us. Occidental Petroleum recently dropped 200 employees off their payroll–all management personnel. United Air has dropped 1,000 managers nationally. Tenneco has forced a number of their employees into early retirement. Bank of America just announced they will reduce their work-force by 10,000 this year. The oil industry, locally, has left over 1,000 out of work. Times are tough, but we are rather unique. Not one person at B.C. has lost his/her job. Not one salary has been cut. Raises are fewer and smaller, but we have jobs. We have great security here. We are darn fortunate–we all have jobs.

Changes are occurring here, too. As department chair, I am charged with making adjustments to those changes. Some classes are flourishing: Health Ed—of 14 sections, 12 are overflowing; Shape-Up—the growth of that program has been our salvation. Weight and circuit training classes are doing well. Swim Fitness enrollment is stabilized. However, we do have some classes in trouble. Some skill classes have very low enrollment. Skill class sections have been reduced dramatically.

It has become increasingly more clear, from my seat, that some changes are going to have to be made. If students aren't there to teach, we have to go where they are, to teach them. We have to do it enthusiastically. We all know why we are here, why we have a job at all. IT'S THE STUDENTS.

It is quite likely that any change is going to "pinch" us in our "Comfort Zones." In three years, you have made it pretty clear what you like to teach. Trying to meet some of your desires has put a "crimp" in the flexibility of our program. There is not a great deal of flexibility in this staff. I don't mean you have been uncooperative. But you have taught in your subject areas so long that it is understandable you may not

want to change. But change is necessary. If our enrollment was up in all areas, that would be no problem; but this, obviously, isn't the case.

We all have courses we like to teach. We may even feel we can't do something else. Most of us have M.A. degrees in P.E./Health or a related field of study. That tells me you are capable. Whether you feel comfortable or not cannot be a concern of this program. Feeling comfortable is directly related to getting prepared to teach.

Beginning this fall, you may be asked to teach in an area that is not in your "Comfort Zone." It will be in one of those areas where we are impacted and need help. I will not call on the same people to make all the sacrifices. They will be shared by everyone. Seniority won't be a factor in who changes. We have all been here a long time. I will expect those who have knowledge in the area to help you get ready to teach in that area. If you are going to teach Health Education, I'm asking the present Health Education instructors to willingly share their expertise with you.

Shape Up—if this is going to be a viable program, everyone involved must participate in the total program. Bruce will be responsible to see that you know how to conduct warm-ups, aerobics and other activities where you are needed. I've talked with Bruce about alternate ways to take roll. We want you to feel comfortable and know what is expected of you. If you are coaching, I will try to get you involved in your off-season.

This hasn't been a particularly easy speech for me. In fact, I wrote it all out so it would come out right. I have given this a lot of thought. I want you to feel I'm talking to you personally and individually. One thing that sticks in my mind is this: B.C. has honored almost all of your requests for time off to attend meetings or to do things you felt were important for you to do. I feel that if each of us were asked to make a change to accommodate more students, we should be ready and willing.

The bottom line is we still have our jobs, and we all have a responsibility to the STUDENTS. Yes, you may be inconvenienced getting yourself ready to make the change. But if you do the professional job I know you can do, you'll be stimulated by the change. Plus, our department will do a better job for students.

I will be responsible for any change in your assignment. If there are concerns, I'm the one you need to see. Last week, I made a request for volunteers. Since none were forthcoming, the next step is mine. You'll be hearing from me.

Thank you for coming. Have a good weekend. This meeting is adjourned.

PS. Mr. Johnson was re-elected for another three-year term by a 12-1 margin.

Walt Johnson, *Chair, Health and Physical Education*

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Susanne D. Roueche, Editor

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Role-Playing Adolf Hitler

Active is superior to passive at all levels of learning, including the college classroom. This truth requires no further substantiation for history instructors who have employed role-playing and simulation—both of which have long been favored techniques for involving students in reliving the past, in experiencing the difficulty of decision-making, and in appreciating challenges faced by bygone leaders and generations. The question I wish to pose is: Do we history teachers dare role-play the most infamous of all historic figures, Adolf Hitler? The answer, I think, should be "yes," albeit a cautious "yes."

Role-playing is, by its very nature, "gutsy." I had taught history for 15 years to college freshmen and sophomores before personally risking playing the part of a historic figure. Previously, I had developed a variety of student role-plays, but in each of these I merely kept time and managed the post-role-play debriefing. Inspired by the success of these student exercises, at long last I donned black academic cap and gown—plus a concealed pillow for girth—to become Martin Luther for a Reformation Day celebration at my Protestant church (a relatively safe environment for my acting debut). Emerging from that experience with a modest feeling of self-confidence, I proceeded the next day to the college classroom "stage," donning the same cap and gown, sans pillow, to role-play the much less weighty John Calvin for my Western Civilization I class. In both the Luther and Calvin role-plays, the format was that of interviewing. In the Luther appearance, I had previously scripted questions to be asked by a selected inquirer. In the Calvin appearance, all students were encouraged to take the "guest" to task for his theological positions on predestination, sovereignty of God, depravity of man, and so forth. Having survived both role plays with no apparent psychic damage—and, in fact, with much less shyness and fear of looking foolish, I subsequently worked up the nerve to present—to a Western Civilization II class—none other than Adolf Hitler.

The Hitler role-play resulted from my asking students to read Keith Eubank's The Origins of World War II. To amplify and clarify that reading, I announced, "Next Monday, Adolf Hitler will be visiting our classroom. Be sure to have finished your reading and to have written out at least two questions to which Hitler will respond. Questions may be about events and policies associated with the Nazi regime during the 1930s prior to the September 1, 1939, attack on Poland." Student interest heightened when I asked if anyone could locate a military uniform for Hitler whose size was approximately my own. A military reservist in the class quickly volunteered; on the appointed day he arrived not only with an American army officer's hat and jacket but also with genuine collector's-item Nazi armbands replete with swastikas.

On the day of the role-play, I asked for four volunteers from the class to occupy seats in the front of the classroom where they would assume the roles of journalists from the major Western democracies. The "journalist" students sifted through all the questions submitted by the students to eliminate those that were out of the proper time frame or that were "off the wall." The pretended setting was Hitler's mountainside retreat at Berchtesgaden in mid-August 1939. While the journalists completed sorting the questions, I exited in order to greet Hitler—students had not been told in advance that I myself would play the role of our guest. In the hallway just outside of our classroom, I suited up. Unfortunately, a young co-ed in the next classroom, glancing up from her note-taking, let out an audible gasp of disbelief when she saw the Nazi armbands going on my uniform. Her instructor, a dear friend and quite resourceful colleague, quieted her distressed student by suggesting, "Not to worry. It's probably just 'Show and Tell' day in Dr. Raiford's classes!"

"Hitler" entered the room, greeting his guests cordially and explaining that his purpose in inviting the journalists to this meeting was to dispel the myths about him and about Nazi Germany as reported in the Western press. As questioning began, Hitler assumed a demeanor of charming receptiveness as he patiently explained German policies and actions. He frequently pointed to German words such as Reich, Reichstag, Fuhrer, Luftwaffe, and Lebensraum, written on the chalkboard beforehand to clue the student audience as to their meanings as he spoke. Hitler's charm quite suddenly turned to vitriol as he recollected offenses to

the Fatherland. During responses to what the journalists supposed were non-threatening questions, Hitler's arms flailed, his head jerked, his fist pounded—all of which accompanied his harsh retorts. As the interview neared completion (scheduled for 20 minutes), Hitler's air and countenance of cordiality returned as suddenly as it had previously disappeared. He shook hands with his guests, wished them safe passage to their homelands and bid them farewell.

Debriefing the role-play took place during the remaining 15-20 minutes of the class period. I explained to the students that I had based my interpretations of Hitler on Alan Bullock's Hitler: A Study in Tyranny and strongly recommended the book to them. In his detailed account of the Munich Crisis and Hitler's meetings with Prime Minister Chamberlain of Great Britain, Bullock graphically recaptures Hitler's rapidly changing demeanor and almost suggests that Hitler's behavior with foreign guests was more contrived than genuine. Also, actual film footage from newsreels of the 1930s contributed to my portrayal of Der Fuhrer.

The value of the role-play came to light in the debriefing when several students indicated that they now understood much more clearly—than merely from the assigned reading—just why otherwise rational Germans followed Hitler's leadership in the 1930s. Our in-class "Hitler" had dwelt upon Germany's economic recovery during the thirties when other countries such as those represented by the "journalists" had struggled with the ill-effects of the Great Depression. During the debriefing, I made clear how Hitler based Germany's economic gains in large part upon rearming his country in defiance of the Treaty of Versailles and also how he failed to resume World War I reparation payments stipulated in the treaty.

Students also indicated how convincing Hitler's verbal attacks on the "Diktat" (his derisive term for the Treaty of Versailles) would have been to them had they actually been German citizens in the 1930s. According to my students, Hitler's demand for the return of all German-speaking peoples and their lands to the Fatherland would have appeared quite reasonable to a German audience. Most importantly, my students recognized how easy it would be to follow a leader who told them only what they wanted to hear, even if he only told them lies. I explained to the class Hitler's propagandistic tactics and emphasized his mastery of deception. Students had readily seen this mastery for themselves in the role-play, inasmuch as they had read a factual account of events leading to World War II and learned that—within days of the supposed interview—peace-proclaiming Hitler would launch the unprovoked attack on Poland. Furthermore, he would make that attack in league with his avowed archenemy, Communist Russia.

How useful was this role-play? I believe that students learned far more about the subject than if I had given them my best efforts at lecturing on the same topic. Every major point that I would have included in lecture was made either during the role-play or during the debriefing. In fact, I think more points were made—and with more emphasis—in the classroom performance than I usually cover in what is one of my favorite Western Civilization lectures. The active involvement of all students in formulating questions and in the debriefing—and especially the involvement of the four student "journalists"—created an excitement and interest that could only reinforce learning in a most effective manner. The role-play was risky, however, for I trusted the "journalists" to eliminate inappropriate questions—a task they handled well, incidentally; and as Hitler, I did not know where the questions would lead.

I must confess that, despite my fears of looking foolish, as an instructor I stretched and grew by adding to my arsenal of teaching strategies and at the same time discovered some "closet acting abilities" previously unknown to me. Developing a closer rapport with students than had been the case with traditional lecturing added to the effectiveness and richness of the experience. The risks were well worth the effort; I discovered that the college classroom can and should be an exciting laboratory, a place of ongoing experimentation in the search for introducing students to the joys of learning and especially to the joys of exploring history.

My only caution to fellow teachers of Western Civilization who are considering role-playing Hitler for their classes is that they make clear his villainous character. I would be horrified to think that students might misconstrue my or any other instructor's interpretation of Hitler and would leave a Hitler role-play thinking of Der Fuhrer as a hero. Surely no amount of revisionism will ever rehabilitate the reputation of this most infamous of all historic figures to date.

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and initiate requests for additional help.
Students need to monitor their own progress.
Paying attention in class is more important.
Studying is more important.

4. The **Support** category includes the significant differences in the amount of support that students receive.
   - Relationships with family and friends change.
   - There is less contact with instructors.
   - There is less individual feedback.
   - Instructors sometimes are not student-centered.
   - There often is more academic competition.
   - Behavior problems are not tolerated.
   - The environment often is impersonal.
   - Students often are given little direction.

5. The **Stress** category includes differences in the concerns and perceived pressures students experience.
   - There is an increased work load and a faster pace.
   - Students are more independent and are held accountable for their behavior.
   - It is more difficult to earn high grades.
   - An entire course is completed in 14 weeks or less.
   - Many students experience increased financial responsibilities.
   - Many students experience new and often increased social pressures.
   - Students are expected to know what they want from college, classes, life, etc.

6. The **Responsibility** category includes the changes associated with a student's role in high school and college.
   - There are an increased number of choices and decisions to be made.
   - More self-evaluation and monitoring are required.
   - More independent reading and studying are required.
   - Students are more responsible for managing their own time and commitments.
   - Students establish and attain their own goals.
   - Students determine when they need help and must locate the appropriate resources.
   - Students are more responsible to whomever is paying for their education (including themselves!).
   - Interest in learning often must be generated by the student.
   - Motivation to succeed often must be generated by the student.

Summary

Using information we have gathered about the changes that take place when students make the transition from high school to college can help instructors and student affairs personnel to facilitate this process. Our experience with students in an undergraduate learning-to-learn course indicates that many students are not aware of the different environmental and task demands that they will face in college. Helping students to become aware of these changes and of the role that they will need to play in obtaining their education is an important goal for all of us who want to help students maximize their chances of succeeding in college.

Claire E. Weinstein, *Professor, Educational Psychology*

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Suanne D. Roueche, Editor

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Instructor-Created Barriers to Student Learning

An innovative technique for improving the quality of teaching is to examine the belief systems we hold about teaching. By exploring the perceptions we have of ourselves, students and the teaching process, we can uncover personally-held belief systems that, when carried out, act as barriers to student learning.

I became aware of the effects of belief systems while talking to a fellow instructor about how each of us motivates students to come to class and to be prepared. I described how class participation is a component of the final grade in all of my classes and how I collect homework on a random basis, and then my peer said that she motivated students by giving pop quizzes. My immediate gut reaction (although I kept it inside) to her approach was, "That's a terrible and unfair thing to do to your students. I never give pop quizzes!" The obvious question I asked myself later was why I had such a strong aversion to pop quizzes. There certainly is nothing immoral or illegal about them. Then I realized that I had never used pop quizzes because I hated them as a student. I realized that my belief system limited me to only those teaching methods I enjoyed as a student. Now I use pop quizzes and find them effective tools for motivating and assessing students.

Based on this experience, I have discovered that as instructors we hold many belief systems that act as barriers to student learning. When these limiting perceptions are realigned to support student learning, we develop insight into our teaching and into an ability to influence positively the learning process. Included here are several "learning barrier" belief systems, each accompanied by an alternative "learning support" belief and a brief discussion.

1. **Learning Barrier**—"It would be a violation of students' personal space for me to suggest where they should sit in the classroom."
   Learning Support—"The seating arrangement is an important and powerful avenue I can use to encourage a positive classroom experience."
   Discussion—Instructors do not need to accept the seating arrangement students inadvertently create when they walk in on the first day of class. After taking into consideration the needs of individuals and providing a clear explanation where necessary, instructors can design the seating arrangement to support student interaction, group work, student perception of the instructor as peer, and many other learning objectives and needs.
2. **Learning Barrier**—"This is my class."
   Learning Support—"This is our class. Both the students and I together are responsible for the quality of this class."
   Discussion—It is easy for instructors to perceive a class as entirely their own creation. Often the instructor decides what is discussed, when it is discussed, how it is discussed, and how performance is evaluated. In contrast, involving students uses the energy and imagination of everyone involved for creating a positive learning experience. Students, for example, can select learning strategies, present course materials, answer the questions of other students, and help decide what should be tested and how it should be tested.
3. **Learning Barrier**—"I can criticize the book, the material that is being covered, and the classroom, and by so doing establish rapport with my students and enhance student learning."
   Learning Support—"I need to express and thereby encourage within students a positive relationship to the course, the text and the classroom."
   Discussion—Instructors frequently, for example, criticize the text in hopes of "getting in better" with students. The ultimate result of this approach, though, is to increase students' resistance to the text and to undermine their faith in the instructor for having selected it. By maintaining an honest and positive attitude toward all facets of the course, the instructor actively encourages student learning.
4. **Learning Barrier**—"Students either have the discipline to come to class on time, to do their homework, to participate in class, or they don't. They are adults and it is not my responsibility to motivate them."
   Learning Support—"Part of my responsibility as an instructor is to motivate students to come to class on time, to do their homework, and to participate in class."
   Discussion—Many times instructors get lost in the

thought of how students "should" behave because they are adults. It is nice to have classes filled with enterprising and self-disciplined students. At the same time, part of an instructor's job is to motivate students to want to learn. As well, instructors can encourage students to develop the self-discipline necessary for success, not only in the classroom but in the workplace and in their personal lives.

5. **Learning Barrier**—"To get the most out of this class, my students need to perceive its supreme importance in their lives."
   Learning Support—"Students will benefit from this class if they understand its true significance."
   Discussion—If students perceive a course as important, as making a significant contribution to their lives, then chances are they will get more out of that course. However, students who overrate the value of a course often experience undue stress and difficulty with the material. It is the instructor's responsibility to help students both to understand the importance of a class and not to feel overwhelmed.
6. **Learning Barrier**—"Students do not like to, and should not, be called on by name in class. It only intimidates them and interferes with learning."
   Learning Support—"I can create a safe classroom environment that encourages all students to express themselves."
   Discussion—If teachers do not call on students by name when possible, shy and less verbal individuals frequently will not participate in class. These same students need good communication skills for success in the workplace. By letting students know that they will be graded on the quality (effort, preparedness for class, and so forth) as well as the correctness of their participation, the instructor ensures that even shy and less verbal students will begin to express themselves.

Summary

As instructors we can improve the quality of our teaching by examining and, where appropriate, "upgrading" the belief systems we hold about ourselves, our students and the teaching process. This examination and refinement of belief systems can be done alone and/or by working with other instructors in a supportive environment. It may also be helpful to explore both our "learning support" as well as our "learning barrier" belief systems to encourage the maintenance of our positive self-image as instructors. By developing an understanding of how we perceive ourselves, students and the teaching process, and by actively exploring alternate perceptions, we can both enhance student learning and our personal fulfillment as teachers.

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Suanne D. Roueche, Editor

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PUBLISHED BY THE NATIONAL INSTITUTE FOR STAFF AND ORGANIZATIONAL DEVELOPMENT, THE UNIVERSITY OF TEXAS AT AUSTIN
WITH SUPPORT FROM THE W. K. KELLOGG FOUNDATION AND THE SID W. RICHARDSON FOUNDATION

Moving from Theory to Practice: An Added Dimension

Students who take the literal and intellectual steps from the content of the science classroom to the scientific literature in the college library cross an imaginary line that separates the scientist from the lay person. In crossing that often imposing line, the student (lay person) approaches the terrain of the disciplined scientist. Moving into this terrain, the student learns to integrate the theories and concepts of science with their practical applications.

To encourage these steps, I have tried a variety of exercises designed to increase familiarity with biological literature, including the standard term paper and lab report. The most successful exercise, however, has been something quite different from the standard assignments. It has accommodated students whose ages, interests and goals vary considerably; and it has demonstrated the educational benefits of reading, reviewing and critically analyzing scientific reporting.

The Strategy

To create this added dimension for students, I prepare a specific list of current scientific periodicals for each of several different classes, including Human Biology, General Biology and Ecology. This list is presented to each student at the beginning of the semester as part of a handout which describes all reading assignments in detail. In order to further explain my expectations regarding students' critical analyses or scientific reporting, the handout also includes a list of objectives, detailed instructions for summarizing major ideas proposed in the article, a sample bibliography, and questions which can be used to begin the process of critical analysis.

This exercise is especially beneficial because it can be easily adapted to meet a variety of different needs. In the Human Biology course, I give the students a choice: they may either explore in detail a topic of interest by writing a traditional term paper on the subject; or they may explore a variety of topics by reading and analyzing five journal articles. In the General Biology course, each student must report on an assigned experiment conducted in the laboratory. I again present them with a choice: they may either write a standard laboratory report; or they may read and review a scientific article of interest, utilizing the scientific method of reporting research as they compile their review.

I use a slightly different approach in the Ecology class. For these students, I divide the periodical list into categories and require a specific number of readings from each of several categories. These categories include research journals presenting experimental work and following the scientific method in both research and reporting, journals of topical interest which reference but do not report research, government documents and publications, and general interest magazines featuring topics such as health or environmental issues.

Instructions to Students

1. Begin with a complete bibliography of the journal article. Usually the bibliography comes last, but because of the nature of this assignment, please begin your paper with the bibliography. Use the format presented below.
   Frazer, N.B. 1983. Survivorship of Adult Female Loggerhead Sea Turtles. Herpetologica 39:436-447.
2. Summarize the major ideas or questions proposed in the article. If the paper follows the scientific method, summarize each section. When you are writing your report, ask yourself questions such as these:
   a. What is the hypothesis?
   b. What support is presented for the hypothesis?
   c. Is the support original research by the authors or is it from a library search of the literature?
   d. Were all aspects of the study adequately tested or were there omissions?
   e. What conclusions are drawn? Do you agree with them? Do you disagree? Why?
3. Critically analyze the information presented. Ask yourself questions such as these:
   a. Is the information the result of the scientific method of analysis?
   b. Was adequate support presented for each conclusion?
   c. Was the research thorough?
   d. Was the information presented well?
   e. How did the author(s) use graphs and tables? Did these seem accurate?
   f. Does the article accurately reflect biological

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Community College Leadership Program, The University of Texas at Austin
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principles?

g. Why does this topic interest you? Why is it important? What are your views and/or feelings on this topic?

h. What questions did it raise in your mind?

4. Credit will be given for the quality of your reporting. Be certain to thoroughly proofread your paper. Be concise and grammatically correct.
5. Each report should be about 3-4 double-spaced typed pages in length. It is required that you type the paper. Be certain to put your name and class section on the report.
6. Below are journals recommended for this report which are available in the college library. Other journals are also acceptable, but please obtain instructor approval before writing your report. Government documents are also acceptable.

Science
American Journal of Public Health
Scientific American
Ecology
Wildlife Society Bioscience Bulletin
Wildlife Monographs
Journal of Sports Oceans
Medicine
Journal of Dairy Science
Environment
Journal of Animal Sciences
Experimental Biology and Medicine
Journal of Wildlife Management
Journal of Range Management
Natural History
Agricultural Research
Crops and Soils
Journal of Range Conservation
American Forest
Agrologist

Objectives

1. To provide students with a choice of reading and writing assignments.
2. To increase students' familiarity with biological literature.
3. To encourage students to read outside of the text biological topics of interest.
4. To provide students the skills necessary to critically analyze the contents and methods of the articles they choose to read.
5. To create the opportunity for students to apply critical thinking skills.

Benefits

Electing to read and review a scientific article, students gain knowledge, background and understanding of the methods of science over and above what I present in the classroom. More importantly, their interest in science as a discipline, their motivation to independently explore the discipline, and their ability to explore through questioning increase. The overall outcome is that the level of class participation and student-initiated discussion grow as critical thinking skills increase. Typical verbatim comments from students who choose to read and review the articles are: "I'm amazed how interrelated everything is!"; "I didn't know I was capable of reading this. I guess I've learned a lot!"; "I didn't know the library had this!"; "All of a sudden, I see biology topics everywhere, even in the newspaper and on TV"; and "These are fun, and I like doing these reports."

Having integrated this optional assignment into my course syllabi, I have observed:

* Student motivation to learn about the larger subject increases because they self-select articles and topics of particular relevance and interest.
* Students are provided with a ready measure of their own progress by reading and reviewing topics which they analyze using the scientific method.
* Students enjoy controlling their relationship to the course content by choosing their assignment and by reading articles that are relevant to them.
* Students develop their own backgrounds and ask more questions—leading to more formal, analytical thought processes applicable in any content area.
* Adult learners just returning to the college often feel more comfortable with several smaller assignments than with one large one.
* Students gain an inside view of potential careers in science by reading about what professionals in science and science-related fields actually do.
* Students develop selective perception for related topics, and thus set the stage for continued intellectual curiosity and learning beyond the classroom.

As an instructor, I see students getting interested. I see them reading, thinking and asking questions. I relish the thought of challenging them and of the challenge they present to their peers and to me in the classroom.

Marion Klaus, *Instructor, Natural Science Division*

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Suanne D. Roueche, Editor

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The Physics Student's Survival Kit

I do not teach physics, but I try to teach students of physics—the subtle difference produces a fantastic attitudinal difference! Physics is a demanding subject; in order to help present students "survive," I have gathered survival strategies from former successful students and incorporated them into this document. Other instructors may find merit in these ideas and use them to produce brochures for their own disciplines.

The Survival Kit

What's It All About?

Have you registered for a course in College Physics? Do you want to pass the course? Two "YES'S"—and you may need the crutches in these pages!

This brochure memorializes each of your predecessors who timorously registered for a course in College Physics and who struggled to become a *superstes*. It is gratefully dedicated to those who discovered enough fun in the fundamentals of physics to persist.

Successful students have enumerated all of the suggestions contained here. They found them helpful, and they share them in the hope that you will adopt those which will guarantee your survival.

Am I Ready for Physics?

You ARE, if you have three of the four following qualifications:

1. Adequate math skills
2. Minimum modulus of motivation
3. Borderline criterion of formal thought
4. Acceptable coefficient of curiosity

1. ADEQUATE MATH SKILLS
   Take the Diagnostic Math Self-Test, Appendix B, of this brochure. A grade of 85% or better tells you that you qualify.
2. MINIMUM MODULUS OF MOTIVATION
   Motivation is not readily quantified, but some of its components can be identified and manipulated to give a numerical result. This result we'll call an MM ... a Modulus of Motivation. The formula is:

   $$MM = 40 \times CA + 10 \times Q - 2 \times (EH - 20)$$

   where CA = percent (expressed decimally) of total class hours you expect to be in attendance;
   Q = number of times you anticipate asking questions about confusing material;
   EH = number of hours of gainful employment per week. A minimum or qualifying MM = 50.
3. BORDERLINE CRITERION OF FORMAL THOUGHT
   The most important single indicator of probable success in the study of physics is the ability to reason formally. You may not even know what formal reasoning is, but in Appendix C is a raw test to determine your Criterion of Formal Thought (CFT). If your CFT>0 you qualify on this item.
4. COEFFICIENT OF CURIOSITY
   An ingredient essential to the successful pursuit of scientific knowledge is curiosity. During the 1985-86 school year, a group of students devised the formula in Appendix D to determine a Coefficient of Curiosity. While somewhat whimsical, it expresses a relationship of factors which they perceived to be significant and for each of which they submitted a rationale. An acceptable CC = 4 kS.

What If?

If your answer to the question: AM I READY FOR PHYSICS? is YES—then this kit may be needed only in emergencies.

If your answer to the preceding question is NO—you are NOT ready for physics—your immediate task is to change whatever you can to qualify and to grasp at the survival strategies that follow.

What Are Some Survival Strategies?

1. **Take good notes in class.** Since all tests are open-notes, this is the strategy most often cited as being of fundamental importance. Many students suggested rewriting the notes, putting them in a loose-leaf notebook, and using tabs to label chapter headings or special topics. The goal: *Have notes which are useful to you!* For every definition, add explanations which clarify the concepts. For formulas, write first the conditions for which the formula is valid, then, after the formula, the quantity represented by each symbol. Since every correct physical formula must be dimensionally consistent, take special note of the units involved.
2. **Read the text.** Highlight a few words or sentences per page—don't overdo it!

3. **Solve as many problems as you can**. "Most of us find that solving the assigned problems only is not enough!"
4. **Study with others in the class**. Use the conference room of the library, or visiting each other's homes. Question your group about perplexing statements in the text or problems which caused you difficulty. Talk physics!
5. **See the instructor as soon as difficulties surface**. Make use of the time the instructor must be available for individual help—don't fret and fume over a problem! The availability of the instructor is one of the greatest advantages of enrollment in a community college—use it!
6. **"Groove" the concepts of physics**. When you have had some success with solving some problems, then change their wording so that a different quantity becomes the sought solution.
7. **Learn one new thing each day**. Dissect complex ideas and make sure you understand the components—then try to master the synthesis, and relate it to other things you know. Do not parrot definitions; understand them. Physics is a logical structure which requires understanding at every level—don't try to fake it!
8. **Use the Learning Lab**. This is a particularly valuable strategy if you learn better in a one-on-one situation. Computer software now available in the Learning Lab may provide the specific explanations, drills or reviews you need.
9. **Use BCC'S BBS, Conference #5**. If you have access to a computer and modem, you can communicate with the instructor (and others!) by using the school's Bulletin Board. Phone: 761-7543.

Appendices

(Two of the four appendices are included here.)

Appendix A: Footnote

If you know very little Latin, Spanish, French or German and cannot derive from the context the meaning of *superstes*, but you DID turn quickly to this Appendix—you are curious! Please report to your instructor this fact and your computed coefficient of curiosity. Your help will enable us to refine our formulas and our stated minimum qualifications.

On the other hand, if you have read this document still not comprehending *superstes* or any of its translations, you lack curiosity. To continue successfully in physics you must become inquisitive and acquisitive. Don't let any idea or concept rattle in your brain because it finds no anchoring ganglion.

Appendix D: Coefficient of Curiosity

At the end of Term 8562 a group of four physics students—Ronald A. Boyer, William R. Hodorski, Jean Oberg and Jeffrey Rippstein—concocted a coefficient of curiosity. Their letter of transmittal included the following observations.

"Curiosity is defined by some to be the desire to learn or know about anything (*studiosus discendi*). It is unfortunate that our cranial cortex cannot be lifted and exposed to massive amounts of curiosity because trying to stimulate curiosity is not an easy task."

"Our investigations have uncovered the following facts which we have incorporated in our formula to quantify curiosity:

1. The number and extent of brain convolutions, as well as the depth of the intervening sulci appear to bear a close relation to the intellectual power of an individual. Computerized tomographic sections through the brain of a 23-year-old physics student reveal the surface of his cerebral cortex to contain 80 convolutions with an average intersulcular depth of 1.5 cm. Moreover, Gray's Anatomy posits a correlation between the mass of one's brain and the mass of that person's body.
2. The electrical nature of cell stimulation involved in cognition warrants the inclusion of the constant from formulas for electric fields.
3. The prominence of sulci varies inversely with age.
4. Student success as reflected in Grade Point Average seemed to be an element worth considering."

"Our manipulation of these four factors results in the following formula:

Coefficient of Curiosity (C.C.) = $1/(4 \pi e_o) \times M(GPA)^2/t$

Using SI units throughout, $1/(4\pi e_o) = 8.99 \times 10^9$ N m^2/C^2

M = mass of the student expressed in kilograms

t = age of the student expressed in seconds."

"In accord with accepted scientific practice of calling units by names of noteworthy persons, we propose that the combination: N m^2kg/C^2s be henceforth called a SPAHN, abbreviated S."

"Finally, our empirical results—admittedly based on a meager number of samples!—propose a C.C. of 4 kS as the acceptable norm of CURIOSITY."

George J. Spahn, *Instructor of Physics*

For further information, contact the author at Broward Community College, Davie, FL 33314.

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Suanne D. Roueche, Editor

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Of Student Bondage: A Poke at Professional Distance

I'm still naive. I like new semesters. They have the same clean, promising appeal as new years. New semesters are better, though, in their greater abundance. They give our syllabi and our professional selves multiple opportunities for rebirth.

Frequent and regular renascence must be part of the benefits package that goes with college teaching. College instructors get more "fresh starts" than the unfortunates in other fields. They can make, therefore—and break, therefore—more resolutions.

One resolution I have made periodically is this: to achieve the *perfect* degree of professional distance.

Perfect professional distance (I have thought) would enable me to speak like The Oracle to an awed assemblage of students. (Currently, my students register looks more odd than awed.)

Perfect professional distance, hereafter PPD, would enable me to make sudden decisions with shrewd discernment, to dismiss in a snap the woeful saga of the well-tanned student who has three grandmothers to expire in rapid succession in exotic places necessitating lengthy travel to interminable funerals and protracted wakes, while I am trying to propound the million sequential minutiae of writing a research paper.

PPD would enable me to think of my students merely as the embodiments of Social Security numbers to be matched inevitably with grade numbers, perhaps alongside attendance numbers, in total unemotional arithmetic tidiness at the end of the semester.

In short, PPD would unburden my brain. With PPD I wouldn't wonder or worry about my wayfaring students. With PPD I would barely know them.

I've started many a semester with a lust for PPD—a lust for lack of intimacy with students—and usually a new strategy for achieving "nonintimacy." For sake of PPD, I won't (I promise myself) let down my guard, smile broadly, smile warmly, listen to sob stories, listen to jokes, or look at family snapshots before or after class. I'll teach this course (for once) like General Patton. And we'll cover *all* the material. And we'll cover it *on time*. And we'll win the war.

There is always a problem with a new PPD strategy: namely, that I hate it. I hate the plans for distance because, in truth, I hate the distance once I have achieved it. Fifteen minutes into the second class period the PPD plan usually begins to fall apart. I recall that I'm not remarkably similar to General Patton. I notice that my students do not resemble faceless soldiers. Some of them look peculiarly human.

But *they* have little reason to fear. After all, *they* come to class well-armed against PPD, with engaging personalities, with energy and earnestness, and in some cases with the most formidable anti-PPD weapon yet developed—a spontaneous sense of humor. At the slightest indication of an instructor's interest in them, they fire off all their artillery, battering down the barriers.

And what happens? Bonding begins. It isn't quite so tender as what occurs between parent and child in the moments following labor and delivery. But it has its own transient wonder. It isn't Superglue, either. Still, it's strong enough to cement an alliance for a semester.

For me the process starts with the first focused attempts to memorize names of students while they're writing. Thus, this two-second scenario: A student looks up, catches me staring, mouthing her name. She grins at discovering me and looks down at her work again. Suddenly, we have settled in for a semester together. We like our distinct identities, so we've started by getting our labels right.

The bond intensifies when we all work together on writing in progress. Another student brings me his problem paper. He's tired of it, jaded with writing after an hour's fierce effort. I read it carefully—even though he's impatient for a quick fix—and pause to think. He waits while I read. He watches me think. He's expecting a verdict—a colossal and irrevocable "thumbs up" or "thumbs down." But I keep my thumbs on his paper.

Together we start to look at what's there in the still unjudged writing. He tells me what he *wants* it to say. I tell him what it *does* say. We close a few gaps. Then we study wording. He tells me which words don't suit him. From the abridged thesaurus buried within, I present some other possibilities. He points out the parts of the writing that he likes best. I point out the parts I

like best. We scrutinize punctuation. I show him where he has correctly used what he has learned in class and where he has apparently forgotten my excellent instruction.

For a few minutes we have teamed to produce a masterpiece, albeit minor. The student appreciates the experience—regards it almost as a miracle. He can see definite improvement in his writing. I can sense a definite leap in his motivation. The mere acceptance of him and his writing and the moments spent with both will make everything I say all semester authentic to him. I'm not just a figurehead any more. I'm a friendly expert, a tappable resource. And he'll tap me again. We're bonded.

So PPD vaporizes . . . .

It probably condenses again somewhere else, in an idyllic classroom down the hall.

It undoubtedly works wonderfully there.

But my resolution this semester will be to refrain from yearning for it.

Becky Womack, *Instructor, English*

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Editor's Note: NISOD readers, no doubt, will recognize this article; it appeared recently as one-half of the August 26, 1988, issue of Innovation Abstracts. In the process of reducing text in the first manuscript to meet space limitations, the definition for PPD was deleted inadvertently. The critical nature of this editorial oversight—in addition to a typographical error (which effectively destroyed the belief that lightning does not strike twice in the same place)—warranted a reprint of the piece in its entirety. The Editor thanks the authoress for her gracious forgiveness of human error and extends this public apology for our first version of her article.

Suanne D. Roueche, Editor

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The Instructor as Division Chair: Surviving the Change to Administration

When a division chair position becomes vacant, it is often a successful teacher who is chosen for the job. Unfortunately, many of the joys of teaching are not to be found in the role of division chair. Few new administrators recognize how their work will change, nor do they usually have the training to be effective managers. Several ideas follow which most managers learn either from intuition or experience. One must gain insight into managing not only people and time, but also SELF!

Managing People

Since managing can be defined as getting things done through others, it makes good sense to take every opportunity to develop your present staff. Every level of your organization, from students to faculty, deserves your genuine interest and precious time. It is your duty to provide the resources and environment necessary for them to be successful.

Many problems can be avoided when people understand exactly what you expect of them. Although we all assume that subordinates will do what we expect, in many cases they have not been told exactly what their duties are, nor the kinds of values that all employees must share as a part of the institution. Successful organizations share common values among all employees, and this value system needs to be systematically reviewed to keep common goals in sharp focus.

If a subordinate is not performing to set standards, that person needs to know why you are dissatisfied. As a professional, he should consider how the work is not satisfactory and write an action plan which meets institutional goals. This plan should be kept on file to review at the end of the semester. He should be given as much assistance as possible in the resolution of his problem. Special staff development activities are appropriate, as well as assistance from course development and/or marketing staff. Realize that a weakness is often a misguided strength, and try to get the strength channelled in the right direction.

Investigation into different psychological types, a concept pioneered by Isabel Briggs Myers (see the MBIT) and others, could give valuable insight into the personalities of not only your subordinates, but also your superiors. This basic understanding would enable you to realize to kinds of traits they value. Tasks and assignments could be matched with personality strengths.

Because the job involves a team effort, it is in every manager's interest for all subordinates to be both effective and happy in their work. A manager must have high value for both the task and the people. It is unlikely that any administrator will be considered successful if (a) great work gets done but the staff is miserable or (b) little work gets done but the staff is happy.

It is often difficult for new administrators to change from the role of "star" to that of "coach." In the classroom, the instructor is the solo performer—the focus of the spotlight. Behind the scenes, away from the spotlight, he or she is a coach who nurtures and encourages. If the stars make a mistake, the coach will still want to support them in public and will wait to reprimand them in private. If your people become winners, so will you. It is imperative that you get out of the office and spend time with your team on their own turf. Class observation should not be a dreaded occurrence when a boss evaluates the work of a subordinate. Rather, it should be a time when a coach comes in to admire the work of a professional. If you do not take time to visit informally with students as well as faculty, you will insulate yourself from what is really happening in your division. Information is power!

Teach your subordinates how to do your work. This will allow them to grow, and work can continue while you are absent from campus. Morale will be high because people will feel valued.

Managing Time

Since the job often is so hectic that all things cannot be done well, decide what is most important and do those things extremely well. This will give an important feeling of accomplishment. Decide what can be done fairly well and what can be left undone. It is important to reflect on things done well because the

diversity of a manager's work often leaves questions about what has really been accomplished. Many administrators keep a special file of congratulatory memos, letters from students, and other memories to be savored at later times.

Administering a budget is a year-round job. It is your responsibility to make sure that the approved items are ordered. People need their tools to do their jobs. Have quick access to budget amounts, and use a computer to store ideas for next year's budget. These ideas come at many different times, and a computer can be much easier to find than several scraps of paper. Request items even when there is little chance they will be approved. At least the need will be discussed and, over time, may eventually be met.

Managing Self

Always be completely honest. If you disagree with your superior, let the person know face-to-face, not behind his or her back. No supervisor appreciates people who agree in person and disagree in private. The "private" somehow always becomes "public"!

Spend little time with those in the organization who are unhappy. It rubs off easily and distracts you from productive work. Always seek to become a part of the SOLUTION, not the PROBLEM.

As an administrator, it will be important to know what people are doing at other institutions. Therefore, take an active role in state organizations. Reading the Journal of the American Association of Community and Junior Colleges and The Chronicle of Higher Education will give you a national perspective.

Take an active role in the accreditation process and apply to be a visiting team member of your accrediting organization. Many will avoid important roles during an institutional self-study, but this is another avenue for professional growth which can be rewarding both now and later. Having important responsibility during a self-study will give you better insight into the accreditation process, as well as into how your own institution works. Colleagues will have an opportunity to see your strengths, thus earning you their confidence that you could handle greater responsibility!

Budget time for professional development. Hopefully, your work will maintain the challenge and excitement necessary for continued professional growth. New challenges are required for any position to maintain its vitality. Although the challenge of administration will provide a learning experience for the present time, it is imperative to continue learning. Harry S. Truman agreed with this need when he said, "The only things worth learning are the things you learn after you know it all."

David L. Petrash, *Director, Fine Arts Division*

For further information, contact the author at Grayson County College, 6101 Grayson Drive, Denison, TX 75020-8299.

Plan now to attend NISOD's eleventh annual International Conference on Teaching Excellence and Conference of Administrators, May 21-24, 1989, in Austin, Texas. Announcements have been mailed to all NISOD presidents and contacts.

The program will feature:

- Five pre-conference workshops
- Extended sessions led by more than 90 Master Teachers and/or teams of outstanding educators
- Ceremonies honoring recipients of the newly-established National Master Teacher Awards
- Presentation of the third annual Quantum Leaps Toward Excellence Award
- A visit to the San Antonio Riverwalk
- A cruise on the Lone Star riverboat
- The return of the Mexican buffet
- Dancing to Texas Fever

Suanne D. Roueche, Editor

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The Law Library: An Effective Teaching Resource

Everyone needs a challenge to keep going. Teachers need the challenge of opening exciting doors to students; students need to be challenged by assignments. Textbooks often fall short of offering sufficient challenge and excitement to maintain student interest for an entire semester. Therefore, we, as educators, must strive for new, improved ways of opening doors for our students.

During my years of teaching criminal justice, I have come to realize that many resources available as learning tools are seldom used. One of these is the law library. I was introduced to the law library in graduate school and forced to use it often while attending the F.B.I. National Academy in Quantico, Virginia. Although my exposure to this library was minimal, I soon realized the potential value in having learned a concrete skill through which I could answer my own legal questions. In a Constitutional Law course, the instructor used case law exclusively to teach law, explained how it applied to various situations and why certain other situations fell under similar law.

Midland College, through the extensive efforts of administrators and faculty, was able to obtain a law library which was ready for basic use in August 1988. Through donations and purchases, the Midland College Learning Resource Center added the following to its already existing annotated statutes:

Lawyer's Edition 2d and Southwestern Reporter 2d, volumes containing the text of Supreme and appellate court opinions, as well as, in the Lawyer's Edition 2d, annotated comments on cases and case summaries prepared by the editor;

Texas Jurisprudence 2d, a legal encyclopedia containing explanations of law and appropriate case law;

Texas Digest 2d, a directory of cases categorized by seven major topics and over 400 subtopics;

Shepard's Texas Citator, used to research case law to determine its current applicability to legal issues.

Although not a complete law library, this is more than adequate for use as a teaching resource—primarily in two teaching areas, Legal Assistance and Criminal Justice.

Within the criminal justice curriculum, several courses involve the use of case law as teaching aids—e.g., Constitutional Law, Legal Aspects of Law Enforcement, Fundamentals of Criminal Law, and Courts and Criminal Procedure. Prior to the existence of this on-campus facility, faculty had to rely on making copies of cases to be studied, or merely mentioning them during the lecture. That, somehow, seemed dull and unexciting.

Beginning with the Fall 1988 semester, all entering criminal justice students are required to attend a two-hour seminar on the law library: they are introduced to the various books available, shown how to use them, and taught to prepare a four-part case brief for classroom discussion. Assignments are then made which require students to prepare and submit case briefs for grading. Students are encouraged to work together on these briefs and to get as much as they can from the case study. This seminar is required as part of Introduction to Criminal Justice. The skill taught during this seminar can be used throughout the course of study by all instructors, to enhance learning and raise levels of excitement in the classroom about the subject. Students, in turn, can enhance their own learning and the effectiveness of research papers by using legal illustrations.

It is felt that students who can answer their own questions, prepare their own notes and arguments for class discussion, and feel more confident in being able to use the law library will get more out of their education than by merely being told that the law exists, and that it is such and such. Additionally, many of these students will eventually secure positions within the criminal justice system. Being able to locate answers to important legal issues can only improve the performance of these future criminal justice professionals.

Robert W. Peetz, *Coordinator, Criminal Justice*

For further information, contact the author at Midland College, 3600 N. Garfield, Midland, TX 79705.

Establishing Academic Objectives by Consensus

A massive educational unit with diversified views and directions can link itself to the goals and objectives of an institution. During the 1986-1987 academic year, I experimented with a consensus process of linking the objectives of the social sciences, humanities, and developmental studies divisions with those of the college. Faculty were asked to develop, agree, monitor, and assess the progress of objectives designed to give their divisional areas a common direction and to support the mission of the institution.

Identifying Institutional Goals and Objectives

The first step was to identify the goals and objectives of the institution. Using the institutional ten-year plan, I extracted those goals applicable to the areas that I supervised and translated them into a list of objective statements. The list incorporated certain key ideas–such as, quality instruction, professional development and course/program review and was distributed among the faculty for their review.

First Round. At the first Teaching Area Meeting, I discussed the statements and the importance of establishing objectives with the faculty. The objectives would guide us in our spending priorities, support services, and instructional decisions and enable us to measure our progress.

Initially, I asked the faculty to examine, revise, and react to the statements, then prioritize the list. After receiving the initial responses, I edited, regrouped the material, and sent the list to the faculty for reaction.

Second Round. The second round came back in a more refined way. Many of the ideas were refocused, changed, and rearranged from the initial listing. Faculty wanted to add something special, a word here or there, to their initial responses and to those of their colleagues. The priority list again was juggled, was almost unrecognizable from the original list, but a direction began to unfold. Instruction and quality time in the classroom were at the top.

Third Round. The third round became one of final refinement. Many of the faculty began to look at the ratings of others and adjusted their own accordingly. There were some minor changes to the second list; but as a whole, the ideas and rankings remained essentially the same. The faculty, diversified in their disciplines, had arrived–in about three weeks–at a consensus that would provide the direction for the entire year.

Now that the road map was established, I proceeded to monitor our progress by soliciting faculty comments. Throughout the year, I would send them copies of the objectives and ask for input. Many colleagues ignored the request, at least initially, but those who submitted materials began to build a database of measurable progress. By the end of the first semester, I could see a pattern forming, one that would help facilitate spending during the second semester and would help me in the preparation of the next year's budget. By the end of the year, I had evidence supporting the accomplishment of our objectives.

Evaluating Progress

The final step in the process was to assess our progress. At this point, I sent the list of objectives to the faculty; each objective was accompanied by an accumulation of comments made during the year; and each faculty member was asked to review and make additional comments. This process took two or three rounds, but in the end we had an excellent picture of our accomplishments. The initial one-page list of 10 objective statements expanded into a three-page description of the year's activities. It was a clear picture of where we had placed our emphases.

To portray the results, I designed a simple survey-type instrument, based on a Likert scale, that could assess perceptions in minimum time. Each faculty member was asked to rate each objective based on the degree of successful completion. I calculated the results and created a bar-graph. At the final Teaching Area Meeting, I distributed the graphs and gave faculty an opportunity to comment. The discussion provided a productive way of collectively evaluating our accomplishments, as well as setting the stage for redeveloping the objectives for the upcoming year.

As well, I could write the annual report and descriptions of the activities in my instructional areas. The objective list had facilitated my assessment of our academic progress.

Developing a process for measuring success in an academic setting is no easy task, but it is worth the additional effort. When the objectives are established by faculty consensus, they become more meaningful, serve as better tools for making academic decisions, and promote a commitment to success.

Alvin J. Marrow, *Associate Dean, Instruction*

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Suanne D. Roueche, Editor

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What the Fox Needs to Know

The fox knows many things, but
the hedgehog knows one big thing.
Archilochus

High Fashion

CBL (competency based learning) is back in town. Resplendent in color-coordinated garb, CBL is all order and system, exuding rules and structures and steps. CBL provides education's current high fashion look. Traditional role-model instruction, by contrast, is little more than rumpled corduroy. The appeal to our beleaguered colleges and institutes is obvious: CBL promises a stylish science of instruction to replace an outmoded art.

The CBL process starts with getting together a group of practitioners, what one authority calls the lunch bucket brigade. They spend a predetermined time (which sounds a lot like traditional instruction), usually two or three days, with a facilitator and break down the job into 100, or 150, or 287 specific tasks. These can range from "communicate with peers" to "assemble high pressure air hose." The result is the familiar DACUM (Develop a Curriculum) chart, which contains in detail everything which might appear on a job description except "other tasks as assigned." A little problem here, because these "other tasks" often constitute the major part of many jobs.

After each task has been identified, it is put into a competency format, which states a pre-specified level of performance which must be achieved under pre-specified conditions. Based on these statements, modules are developed—with pre-test, objectives, learning materials, learning activities, and post-test.

CBL is very imposing, so precise and tidy, so tangible and well-engineered. But does it work? Is CBL competent, or is it just the latest look?

A Plan Too Perfect

Probably the primary defect of CBL is what its advocates believe to be its biggest strength: its mechanistic precision. The development process wrings out everything we can discover about a job and transforms these things, and only these, into competencies. Thus, students learn what they need to learn and no more. Clean, clear, efficient.

The problem is that many jobs do not parse very easily. A few jobs, such as typist or elevator operator, can be divided into specific skills without difficulty. A group of journeymen hedgehogs, for example, could probably develop a DACUM which would be sufficient to prepare an apprentice for every conceivable hedgehogian task.

However, even occupations like caretaker contain many qualities that fall between the cracks on the DACUM. When the focus is entirely on tasks that appear on the chart, some of the most critical qualities may be inadvertently overlooked. Every rabbit knows that the fox, one of nature's prime entrepreneurs, is somehow more devious than his DACUM would suggest. The rabbit wishes it were otherwise.

In the analysis of what went wrong in the Three Mile Island nuclear accident in 1979, the Kemmeny Commission concluded that human error on the part of the technicians caused the failure. The technicians responded by saying that they had not been trained for the situation which they had to confront. The Commission looked at the training program and discovered that the technicians had learned how to operate the reactor without any understanding of why things happened. They had been well trained to push the right buttons at the right time, but they were incapable of dealing with the unfamiliar.

[This kind of training brings to mind the explanation made by a car manufacturer when criticized about the quality of the brakes on his vehicles. The brakes, a spokesman responded, are adequate in all normal circumstances. This was hardly reassuring, as the times you need really good brakes are in abnormal circumstances.]

In the process of getting all the tasks for a nuclear technician written down on paper, the connections and the meaning and the why must have gotten lost. Indeed, it is probably impossible to write down all the subtleties of most jobs. It is well known that novices are better able to describe how they do their jobs than are the experts. Expertise is increasingly understood to be basically intuitive and not easily dredged up to the conscious level. Furthermore, while novices tend to approach the same task in the same way, each expert

tends to develop a unique strategy. This reality is currently bedeviling to those who think they can build a thinking, or fifth generation, computer.

Thus, if you are able to predict—with a high degree of confidence—everything that workers will confront on the job and you are able to put this down on paper, CBL may work. However, if there are many "other tasks" or if you expect the program to go beyond training at the novice level, you may get a program meltdown.

The Utility of Wastefulness

Consequently, the biggest problem with CBL is that it assumes the world is very tidy and measurable. On the other hand, the major strength of traditional instruction is that it recognizes that the world is imprecise, contradictory, and full of surprises. There surely can be no doubt that a 50-minute class in role model instruction is really about 10 minutes of burger and 40 minutes of lettuce, tomato, cheese, and bun. But it is these other ingredients which transform a piece of broiled ground beef into a hamburger. The extras, therefore, only seem like extras because without them the flavor, the texture, the glory of "hamburgerness" is lost.

It is this apparent wastefulness which is the strength of role model instruction. The anecdotes, the personal experiences, the excursions into what might seem at the time to be irrelevant territory—all of this supposed wastefulness, expunged from engineered education, is actually the richness of human experience.

The Fox Starts Out

Study after study, literally for decades, has concluded that there is no one best method of instruction. However, at the same time, some methods work better for certain students than for others; some work better in some subjects than in others; and some work better in some circumstances than in others. But no one method is best for all students, in all subjects, in all circumstances.

CBL should be seen as one of the many options in the instructor's toolbox—for example, lecturing, shop projects, seminars and workshops, field training, essays, oral presentations, product development, role-playing, computer-assisted instruction, simulation, and audio-tutorial. And a variety of tools equips the workman to appreciate the diversity and complexity and subtlety of the human experience. As Abraham Maslow once observed: To him who has only a hammer, the whole world looks like a nail.

Like other systems, CBL is effective in certain circumstances, but it is no panacea. It will work better with more mature and experienced students, for example, than it will with those just out of high school. It will work better with students who have good reading skills than it will with those who are barely literate. It will work better with topics where there is one right answer than it will in those areas where solutions depend on context. And it will work better when enough time (at least 10 hours of development to one of instruction, according to authorities) and money are available than if only lip service support is provided.

CBL is highly effective with some students learning some circumstances. CBL is a useful instructional tool for training a hedgehog. The fox will need more.

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Suanne D. Roueche, Editor

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Taking the Guess Out of "Multiple Guess" Exams

Many students anticipate multiple choice exams with all the joy of a dental visit. One way to deal with their anxiety is to encourage use of a problem-solving model:

1. Define the problem—ensuring that symptoms aren't confused with the problem.
2. Generate solutions to the problem—without engaging in evaluation.
3. Evaluate the solutions—systematically and thoroughly.
4. Make a decision—based on the systematic evaluation.

Defining the Students' Problem(s)

Students who experience frustration with MC exams are rarely able to explain the source of that frustration. Using the problem-solving model, the instructor can help students clarify the problem and its solution.

Three general areas warrant examination. First, *explore the students' emotions*. Many students experience intense anxiety because they feel that they have absolutely no control in the exam situation. As a result, they place blame on instructors, poor questions, difficult material, etc. These negative reflections cause students to lose even more confidence.

Next, *review their learning skills*. The problem may be lack of preparation (problems with time management, notetaking, studying, etc.) or difficulty with exam writing (an inability to read questions systematically, to budget time appropriately, etc.)

Finally, *review students' diet, exercise, and sleeping habits*. Here it is important to separate symptoms from problems. Is poor concentration causing poor exam preparation which is causing sleepless nights? Or are poor sleeping habits causing concentration difficulties which are causing poor exam preparation?

Simply exploring these issues seems to give students a greater sense of control. Once they determine what the problem is, they can get on with the business of generating solutions and then evaluating them.

Working Through Multiple Choice Questions

The same problem-solving model can be applied to MC questions.

Defining the problem: Students often merely glance at the question (or stem) before they begin to look for the right answer. But they really don't know what they're looking for. Reading the stem completely and carefully is the crucial first step. Before looking at the answers, students must understand what the "problem" is (preferably by restating the stem in their own words). One way of reinforcing this approach is to cover the answers and then read the stem. Students must, therefore, consciously remove the paper before moving on to the next step.

Generating solutions: In MC exams, the instructor generates the solutions. The students' responsibilities are to read each answer carefully and to make sure that they understand all the choices.

Evaluating solutions: Usually one or two choices can be eliminated immediately. After the initial elimination, students may need to go back to the stem to ensure that they clearly recall the "problem." In light of the problem, they then carefully review each of the remaining answers. If the students know their material, this step should be fairly straightforward: simply evaluating the "solutions" carefully and, above all, systematically.

Making the decision: The best "solution" to the "problem" will have become clear during the evaluation step. At this point, however, many students are tempted to throw out the systematic approach in order to try to second-guess the instructor. If they do so, they forfeit their control over the process. Students should be reminded of this temptation and of its impact on the quality of their answers and on their sense of control.

Initially, students may worry that the problem-solving approach will take too much time. However, when they try it, they realize how much time they have wasted in the past.

Glynis Wilson Boultbee, *Red Deer College*

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Using Student Information Cards

The purpose of the Student Information Card is to quickly gather information about the student in order to: determine if proper student placement has been made, determine present student attitudes toward the course, and save instructor time by having student information directly available.

A Student Information Card is handed to each student as the first item of business on the first day of class:

S.S. Number

Last, First (Name preferred) Occupational Plans

Address (home) Phone (office)

Total Cred. Lab Instructor Date of H.S. Graduation

Hr. Employed (wk.) Colleges, Dates, and Degrees

(cont.)

Previous Science Courses (H.S. or college)

Reason for taking courses and other information on back

At the top of the card the student indicates the name he/she wishes to use in the class by putting that name in parentheses. Some students have indicated the preferred use of a nickname, or their military title, or Mr. or Mrs. Where students indicate colleges previously attended, they are to include any previous attendance at this college. Where previous science courses are listed, they are to include both high school and college science courses. They are also to state if they have taken Algebra I, which is one of the "unwritten" prerequisites for the course. The high school graduation date was included after the instructor found that many "older" students (22 to 68 years of age) wanted to give that information.

With this information completed, students are asked to turn the card over and write at least three statements. (The back of the card is blank.) The first statement begins: "I am taking this course because . . . ." Most students do use a complete sentence with capital letters and periods in the proper locations and give answers that include more information than just that "required." The second statement also must be completed in sentence form and begins: "My current level of anxiety is . . . ." Many students who are new to the course are very anxious; often just having the opportunity to admit to the anxiety can help lower its level. The third statement is fill-in-the-blank: "I am a _____ science student." The descriptive words vary quite a bit and, with the other two statements, provide a better "picture" of the student now in class. The fourth statement is to include any information not yet solicited that the student feels the instructor should have. Usually this opportunity elicits information on student medical conditions, learning disabilities, and upcoming events that will require students to miss class.

The cards were developed for use in my classes about 10 years ago, and this fall semester a modified version was completed by every student in the Division of Natural Science and Technology. The information that they provide has helped me meet student needs in a more expeditious manner, often as early as the second class period.

Lloyd L. Willis, Associate Professor, Biology

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Suanne D. Roueche, Editor

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Teaching Thinking Across the Curriculum: A Cooperative Learning Approach

Background

Our society is shifting from an industrial economy of goods producers to a service-oriented economy of information handlers. With these facts in mind, Community College of Aurora's Integrated Thinking Skills Project Team prepared to implement a non-traditional program through a cooperative learning approach.

Purpose: Where Are We Going?

Defining where we were going was the source of lively debate. Although the terms "thinking skills" and "critical thinking" had been liberally sprinkled on our training sessions, we soon discovered that no two people in the room had the same—or even similar—definitions. We were attempting to develop and implement a thinking skills program with vastly different ideas about what that meant.

Hours and a great deal of heated discussion later, we arrived at a working definition; this gave focus to our efforts. Next came the establishment of project goals and objectives. Once this was accomplished, the group looked at potential pitfalls that might impede our progress. We then brainstormed ways to avoid potential stumbling blocks like "moving too fast," "giving in to early failures," and "taking the short view."

Planning: Do We Have A Road Map?

Now we needed to develop a road map to make certain we stayed on course. The team began by exploring each member's underlying assumptions about thinking and teaching. Can thinking skills be taught? Do students—and teachers—want to think? If thinking can be taught, can it be taught in any course?

Our answers to these questions helped us formulate a contract, of sorts. The list of underlying assumptions we generated (with a reasonable project timetable) formed a mutual belief system about our task and, in large part, helped us begin our journey from the same place.

Methods: How Will We Get There?

At this point, team members were ready to begin exploring the various curricular and instructional methods that would "get us there." These discussions centered around five key elements: content objectives, thinking skills objectives, evaluative criteria, instructional materials, and classroom activities.

Faculty members sorted out content objectives for their courses, then decided which thinking skills might help students master these objectives. Next, team members identified appropriate materials—including textbooks, supplementary materials, handouts, overhead transparencies. Finally, from a list of teacher- and student-centered instructional methods, team members chose effective teaching strategies.

Using this curriculum model, project participants now had a set of tools to get to the desired location: teaching students content and how to learn it, through direct thinking skills instruction.

Evaluation: How Will We Know We've Arrived?

The evaluation task was the most difficult, by far. In addition to the evaluation of specific content/reasoning objectives, the team decided on several other ways to assess whether students had profited by thinking skills instruction. These included pre- and post-instruction surveys and writing samples, student/faculty evaluations of instruction, student interviews, and faculty progress reports.

A Final Word

Cooperative decision-making around these topics prepared faculty members to design courses that integrate content with thinking skills instruction. This approach helped project participants cultivate the "change mentality" necessary for an interdisciplinary thinking skills program.

Cynthia A. Barnes, *Director, Integrated Thinking Skills Project*

For further information, contact the author at Community College of Aurora, 791 Chambers Road, Aurora, CO 80011.

Algebra With a Critical Thinking Approach

For six months, I have participated in a Thinking Skills Project at the Community College of Aurora. I was among the first dozen instructors who were trained in the recognition and use of 22 thinking skills and then asked to train students in one or more of these skills—not as separate course content but as content integrated into our regular curriculum.

The Process

Algebra is definitely not the preferred language in the world, even though more people speak and write it than any other language; and if there is any one topic in algebra that would win the award for least-liked, it would probably be exponentials and logarithms. And just to make sure that we were taking on a real task, I decided to attack graphing by function analysis (as opposed to plotting of points). The following events occurred in my College Algebra class.

The students first analyzed a large selection of exponential functions to determine how many different components there were. We were then able to extrapolate the following general form: $f(x)=aB^{b(x-c)}+d$

We checked out each of the five constants individually to see which values were acceptable/unacceptable; we also discarded the trivial cases such as B = 1 or 0. The bulk of the classroom time was spent testing to see how each constant affected the general graph. Next came the most difficult task of all—determining the order in which to look at the constants for graphing purposes (Bbacd).

Then came the fun part. We created a mnemonic to lock that sequence in our memories: Big boys are cuddly dudes. (The wording may be due in part to the fact that the class was 70% female.)

The entire process took 3/4 of a two-hour class session, and we spent the remainder of the class practicing a variety of exponential functions.

The Outcomes

The process was magical! The students forgot their fears while they hunted down the offending creatures and put together a general "mug shot" of exponential functions. Their fears then dissipated as we "poked" at each part and watched as the graph wiggled.

Some students, for the first time in their lives, were doing some real power thinking. They found themselves "in control"; they set a goal and accomplished it. They were working together as a team, sharing partial thoughts to trigger others' thoughts. We were involved so deeply with concept development and attainment and pattern recognition that breaktime came and went unnoticed.

Three of the students whose academic and/or math skills were judged marginal for this class blossomed into mathematical fireballs for this class period. After 20 minutes of class, I was doing little more than facilitating. Two weeks later when tested on this material, ALL of the students did A-level work.

For the remainder of the term, I was dealing with a new group of people. They WANTED TO KNOW so much. They were also WILLING TO DO so much. Out of the original class of 34, 18 earned the grade of "A." For this course I have had my "standard" syllabus and my "ambitious syllabus." After seven weeks, I switched to the latter, only to find that it was too short on aspirations.

The results of this activity in my classroom was exciting for the student—and the instructor—though one aspect caused a minor alarm. Enrollment for the class was allowed to exceed not only the preferred instructional size but the classroom capacity, and the usual withdrawals did not take place. In all twelve classrooms in this project, retention was up! [One word of warning for schedulers: Most students love being active participants in the teaching/learning process.]

An additional spin-off of this process was the students' introduction to the scientific method, however abbreviated it might be. Many of these students might never be exposed to this method again. So it was important that they experienced gathering raw data, synthesizing a general statement that fits all the data, and then testing the statement as a valid (and centuries-old) method of increasing knowledge.

This approach on graphing exponentials may be a reinvention of the wheel. However, combined with the "thinking skills" approach to general classroom delivery, it confirmed my love of teaching and my students' love of learning.

Frank A. Neckel, *Division Chair, Mathematics*

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ERIC Clearinghouse for Junior Colleges

JAN 05 1989

Suanne D. Roueche, Editor

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